The world's most comprehensive encyclopedia of the military weapons of the 20th century

12 PASS

WAR MACHINE

An ORBIS Publication

90p **82**

IR £1.15 Aus $2.15 NZ $2.65 SA R2.45 Sing $4.50

Destroyer Developments of World War II

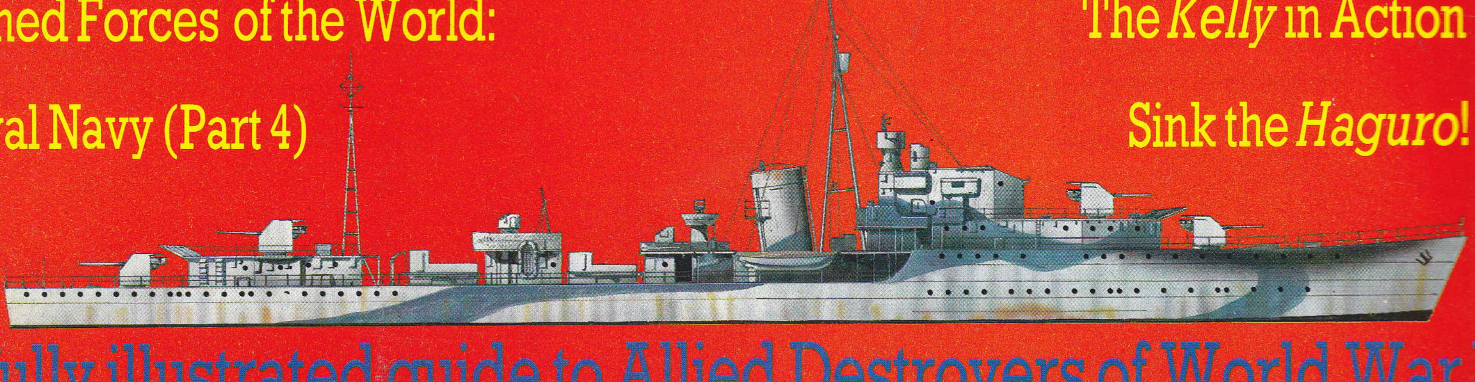
Armed Forces of the World:

Royal Navy (Part 4)

The Battle of Vella Lavella

The *Kelly* in Action

Sink the *Haguro*!



A fully illustrated guide to Allied Destroyers of World War II

WAR MACHINE

Volume 7 **Issue 82**

Published by
Orbis Publishing Ltd
© Aerospace Publishing Ltd 1985
Editorial Offices
War Machine
Aerospace Publishing Ltd
179 Dalling Road
London W6 0ES

Managing Editor: Stan Morse
Editorial: Trisha Palmer
Chris Bishop
Chris Chant
Ian Drury

Design: Rod Teasdale
Colour Origination: Imago Publishing Ltd, Thame, Oxon

Typesetting: SX Composing Ltd

Film work: Precise Litho Ltd

Artists:
Tony Gibbons
John Ridyard

28853

Printed in Great Britain
by The Artisan Press Ltd

Subscription Manager: Christine Allen
0488 72666

Consultant Editor: Major General Sir Jeremy Moore KCB OBE MC, Commander of British Land Forces during the Falklands campaign.

Distribution and marketing offices:
Orbis Publishing Ltd
Orbis House
20-22 Bedfordbury
London WC2N 4BT
Telephone: 01-379 6711

Circulation Director: David Breed
Marketing Director: Michael Joyce

WAR MACHINE

Forthcoming issues feature:
Modern Machine-Guns
Early Missiles
Modern Maritime Aircraft
Rifles of World War I
Airships

Picture acknowledgements

Cover photograph: US Navy. **1621:** Imperial War Museum/US Navy. **1622:** Imperial War Museum/Robert Hunt Library/US Navy. **1623:** Robert Hunt Library/US Navy. **1624:** Robert Hunt Library/US Navy/US Navy. **1625:** US Navy/US Navy/US Navy. **1626:** Imperial War Museum/Imperial War Museum. **1627:** Robert Hunt Library/Robert Hunt Library. **1628:** Imperial War Museum/Imperial War Museum. **1629:** Imperial War Museum. **1630:** Imperial War Museum. **1632:** Imperial War Museum. **1633:** Imperial War Museum/Imperial War Museum. **1634:** Imperial War Museum. **1635:** Imperial War Museum/Imperial War Museum. **1636:** Imperial War Museum. **1637:** Robert Hunt Library. **1640:** Robert Hunt Library. **(iii):** Royal Navy/Royal Navy. **(iv):** Royal Navy/Royal Navy.

HOW TO OBTAIN ISSUES AND BINDERS FOR WAR MACHINE

Issues can be obtained by placing an order with your newsagent or direct from our Subscription Department. If you have difficulty obtaining any back issues from your newsagent, please write to us stating the issue(s) required and enclosing a cheque for the cover price of the issue(s).

AUSTRALIA please write to: Gordon and Gotch (Aus) Ltd, 114 William Street, PO Box 767G, Melbourne, Victoria 3001. MALTA, NEW ZEALAND, SINGAPORE & SOUTH AFRICA: Back numbers are available at cover price from your newsagent. In case of difficulty, write to the address given for binders.

UK/EIRE
PRICE: 90p/IR£1.15
SUBSCRIPTION:
6 Months: £26.00
1 Year: £52.00
BINDER: Please send £3.95 per binder, or take advantage of our special offer in early issues.

EUROPE
PRICE: 90p
SUBSCRIPTION:
6 Months air: £44.72
surface: £36.14
1 Year air: £89.44
surface: £72.28
BINDER: (inc. Postage)
air: £5.50
surface: £5.00

MALTA
Obtain BINDERS from your newsagent or
Miller (Malta) Ltd,
MA Vassalli Street,
Valetta, Malta
Price: £3.95

MIDDLE EAST
PRICE: 90p
SUBSCRIPTION:
6 Months air: £50.18
surface: £36.14
1 Year air: £100.36
surface: £72.28
BINDER: (inc. Postage)
air: £8.25
surface: £5.50

AMERICAS/ASIA/AFRICA
PRICE: US$1.95/90p
SUBSCRIPTION:
6 Months air: £59.24
surface: £36.14
1 Year air: £119.08
surface: £72.28
BINDER: (inc. Postage)
air: £9.50
surface: £5.50

SOUTH AFRICA
PRICE: SA R2.45
Obtain BINDERS from any branch of Central News Agency or
Intermag, PO Box
57394, Springfield 2137

SINGAPORE
PRICE: Sing$4.50
Obtain BINDERS from
MPH Distributors
601 Sims Drive
03-07-21
Singapore 1438

AUSTRALASIA/FAR EAST
PRICE: 90p
SUBSCRIPTION:
6 Months air: £64.22
surface: £36.14
1 Year air: £128.44
surface: £72.28

AUSTRALIA
PRICE: AUS $2.15
Obtain BINDERS from
First Post Pty Ltd,
23 Chandos Street
St Leonards,
NSW 2065

NEW ZEALAND
PRICE: NZ $2.65
Obtain BINDERS from your newsagent or
Gordon & Gotch (NZ)
Ltd, PO Box 1595,
Wellington

ADDRESS FOR BINDERS AND BACK ISSUES
Orbis Publishing Limited
Orbis House
20-22 Bedfordbury
London
WC2N 4BT
Telephone: 01-379-5211

Cheques/Postal Orders should be made payable to Orbis Publishing Limited. Binder prices include postage and packing and prices are in sterling.

Back Issues are sold at the cover price, and we do not charge carriage in the UK.

NOTE
Binders and back issues are obtainable subject to availability of stocks. Whilst every attempt is made to keep the price of the issues and binders constant, the publishers reserve the right to increase the stated prices at any time when circumstances dictate. Binders depicted in this publication are those produced for the UK and Australian markets only. Binders and Issues may be subject to import duty and/or local taxes, which are not included in the above prices unless stated.

ADDRESS FOR SUBSCRIPTIONS
Orbis Publishing Limited
Hurst Farm
Baydon Road
Lambourne Woodlands
Newbury
Berks
RG16 7TW
Telephone: 0488-72666

All cheques/Postal Orders should be made payable to Orbis Publishing Limited. Postage and packaging is included in subscription rates, and prices are given in Sterling.

Allied Destroyers of World War 11

HMS Jersey *makes a turn at high speed in the wake of another member of her flotilla. In spite of an ability to take considerable punishment, 13 out of 24 'J', 'K' and 'N' class destroyers were lost.*

Often described by over-colourful writers as 'the greyhounds of the ocean', the destroyer was an undeniably attractive picture at speed. Yet it could be argued that World War II saw the classic fleet destroyer without a function.

It was once common to see destroyers categorized as 'maids of all work', but a good case could be made for adding the rider '. . . and mistress of none'. Developed primarily to screen their own battlefleet and to mount torpedo attacks upon that of the enemy, fleet destroyers found themselves largely anachronistic in the very different Atlantic war of World War II. There were few opportunities to work in the 'traditional' manner, and the underestimated potency of air attack found destroyers unable even to defend themselves, let alone their charges. Lacking credible air defences, their only safety lay in their speed, for they were often not particularly manoeuvrable.

Atlantic convoys found destroyers with superfluous speed but insufficient range, together with inadequate capacity for anti-submarine warfare. In the Mediterranean the threat was more from the surface fleet than the submarine, and the destroyers' designed armament came into its own but, with the constrictions of geography, the losses caused by superior enemy air power were even more severe.

Events such as the torpedoing of the *Scharnhorst*, Narvik, 2nd Sirte and the *Haguro* sinking were exceptions rather than the rule and, even from the outset, the introduction of cheap, specialist AA and anti-submarine ships, geared to range and seakeeping rather than to speed, was inevitable.

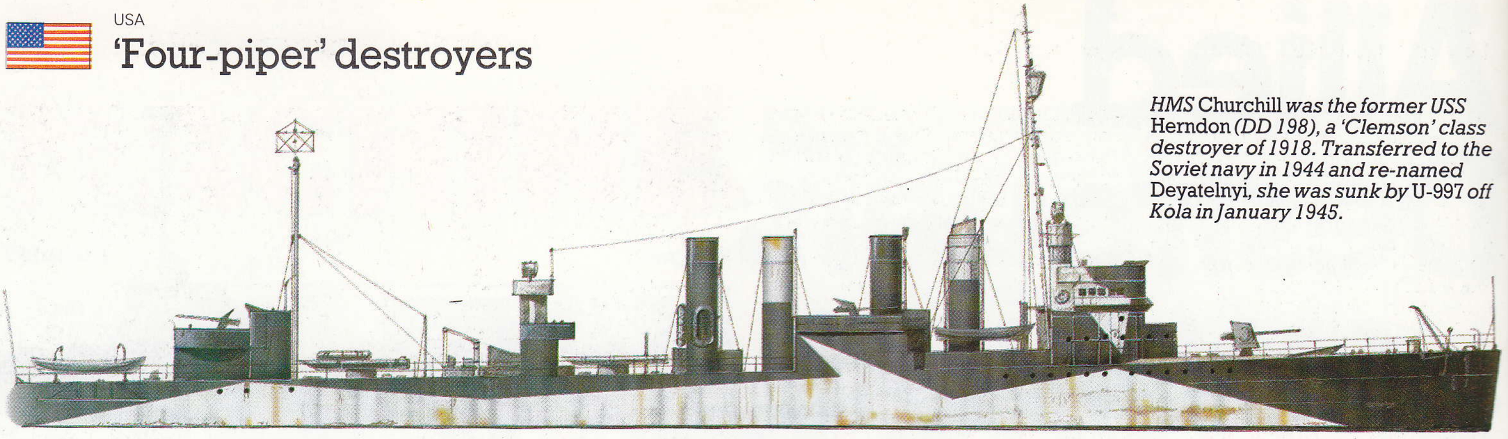
In the Pacific war things were very different, with two major fleets locked in close and bloody dispute. Though the carrier had emerged as the new capital ship, the remainder of the orthodox fleet still retained its role in supporting both the aircraft-carrier and the prolific but vulnerable breeds of amphibious warfare ship.

The Japanese proved adept and imaginative destroyer operators, expending torpedoes with a cheerful profligacy. Eventually the persistent Americans beat them at their own game, developing in the process something of an ideal destroyer, cheap yet durable, fast yet long-legged and capable of both offensive and defensive action. Though rather weak in anti-submarine potential, it had sufficient to cope with the curiously inept Japanese submarine arm.

The US Fleet anchorage at Kerema Retto is seen one day after US forces had finally secured Iwo Jima. A 'Fletcher' class destroyer, USS Bullard *(DD 660), passes in front of an 'Essex' class carrier of Task Force 58. One hundred and seventy-five Fletchers were built, the largest wartime class of destroyers.*

USA

'Four-piper' destroyers



HMS Churchill *was the former USS* Herndon *(DD 198), a 'Clemson' class destroyer of 1918. Transferred to the Soviet navy in 1944 and re-named* Deyatelnyi, *she was sunk by* U-997 *off Kola in January 1945.*

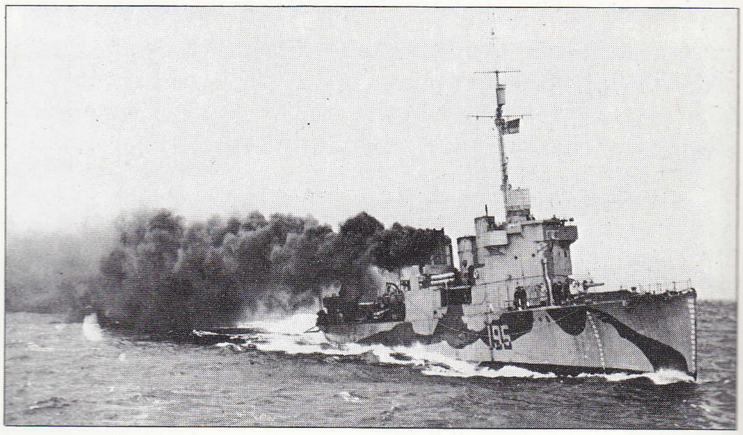
Known variously as **'four-pipers'**, or **'flush-deckers'**, the survivors of this very large group of American destroyers were, like the British 'V' and 'W' classes, in their second war. Resulting from the rapid expansion of the US Navy as it moved towards war in 1917, the design was derived directly from the 12-ship **'Tucker' class**. While having the same displacement and major dimensions, the latter differed in having a European-style raised forecastle. With two waist-mounted 102-mm (4-in) guns which needed forward arcs, this meant facetting the ships' sides. Six prototype **'Caldwell' class** ships changed the hull form to a long, easy sheerline that gave them a characteristic 'rimmed-by-the-stern' appearance and had the amidships guns resited on a house. Any improvement thereby must have been marginal as the forward arcs were still restricted, blast effects were significant, and weight was moved upwards on an already tender hull. No less than 12 torpedo tubes were fitted, mainly because the sheer quantity of tophamper precluded centreline mounting; only two triples could thus bear on each beam. The main production series, the 111 **'Wickes' class** (DD 75) and the 156 **'Clemson' class** (DD 186), retained these features but were given higher installed power for 35 kts when launched between 1918 and 1921.

No less than 93 were scrapped in the early 1930s under the terms of the London Naval Treaty. During July 1940, immediately after Dunkirk, the Royal Navy was desperately short of escorts and took over 50 in the famous exchange for a 99-year US lease on colonial base rights. Many were in dubious condition and though scarcely the '50 Ships that Saved the World' beloved by journalists, they did their turn, though usually in a cut-down form.

The USS ***Reuben James*** (DD 245) was one of two US destroyers torpedoed in October 1941 while covering convoys before the USA's official entry into the war. In December 1941, a dozen four-pipers were the only US destroyers in the Far Eastern theatre, five being lost during the unequal struggle of the ABDA naval force. Many worked throughout the war, funnels removed or trunked, converted to escorts, minelayers, minesweepers or small auxiliaries.

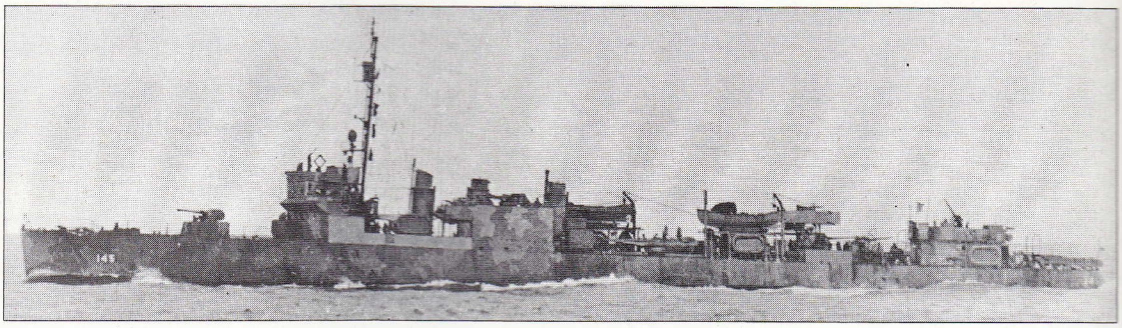
Specification

'Clemson' class (as built)
Displacement: 1,190 tons standard
Dimensions: length 95.78 m (314.25 ft); beam 9.37 m (30.75 ft); draught 2.82 m (9.25 in)
Propulsion: two sets of geared steam turbines delivering 20507 kW (27,500 shp) to two shafts
Performance: maximum speed 35 kts
Armament: four single 102-mm (4-in) and one 76.2-mm (3-in) AA gun, and four triple 533-mm (21-in) torpedo tube mountings
Complement: 135



Above: HMS Wells, *a 'Wickes' class destroyer, is seen making smoke in 1942. These old ships gave valuable service.*

Below: USS Greer *is notable for the fact that she was attacked by the German* U-652 *and replied with depth charges. This would not normally be considered unusual except for the fact that it occurred on 4 September 1941, more than three months before Pearl Harbor.*



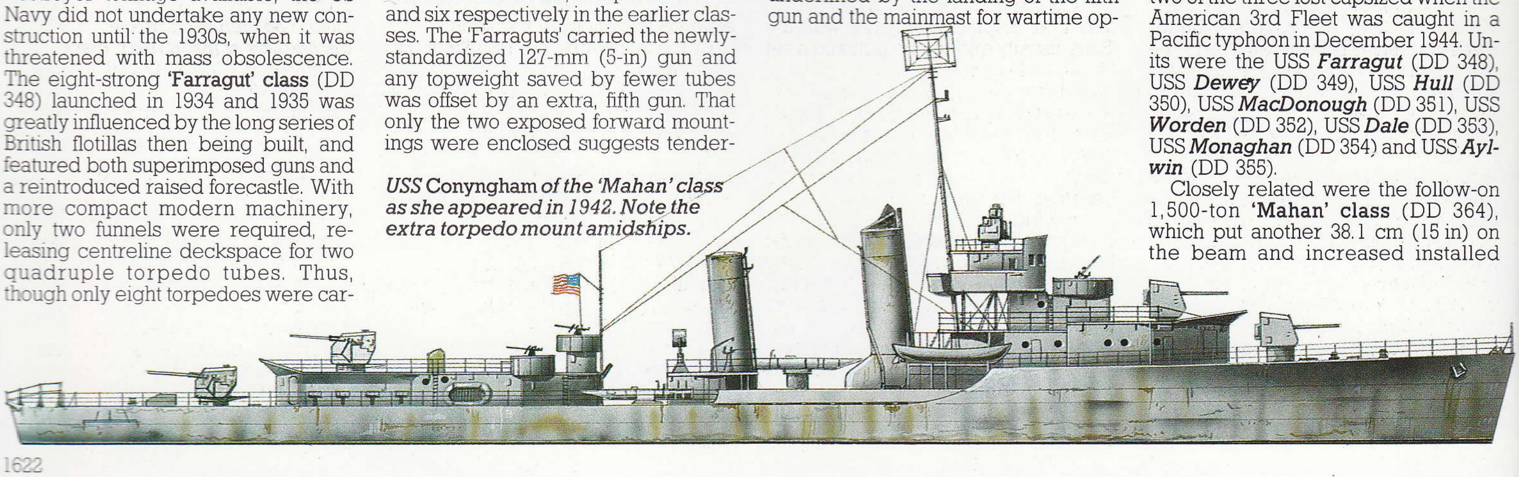
USA

'Farragut' class, 'Mahan' class and 'Porter' class destroyers

With more than adequate warbuilt destroyer tonnage available, the US Navy did not undertake any new construction until the 1930s, when it was threatened with mass obsolescence. The eight-strong **'Farragut' class** (DD 348) launched in 1934 and 1935 was greatly influenced by the long series of British flotillas then being built, and featured both superimposed guns and a reintroduced raised forecastle. With more compact modern machinery, only two funnels were required, releasing centreline deckspace for two quadruple torpedo tubes. Thus, though only eight torpedoes were carried, the full number could be launched on each beam, compared with 12 and six respectively in the earlier classes. The 'Farraguts' carried the newly-standardized 127-mm (5-in) gun and any topweight saved by fewer tubes was offset by an extra, fifth gun. That only the two exposed forward mountings were enclosed suggests tenderness from the outset, a suspicion underlined by the landing of the fifth gun and the mainmast for wartime operations. Despite these modifications, two of the three lost capsized when the American 3rd Fleet was caught in a Pacific typhoon in December 1944. Units were the USS ***Farragut*** (DD 348), USS ***Dewey*** (DD 349), USS ***Hull*** (DD 350), USS ***MacDonough*** (DD 351), USS ***Worden*** (DD 352), USS ***Dale*** (DD 353), USS ***Monaghan*** (DD 354) and USS ***Aylwin*** (DD 355).

Closely related were the follow-on 1,500-ton **'Mahan' class** (DD 364), which put another 38.1 cm (15 in) on the beam and increased installed

USS Conyngham *of the 'Mahan' class as she appeared in 1942. Note the extra torpedo mount amidships.*

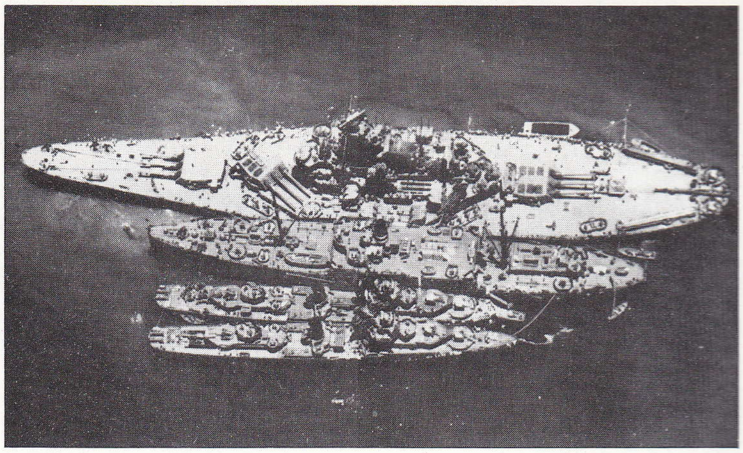


power. The five-gun main battery was retained and a third quadruple torpedo tube mount was added, the forward one now being on the centreline and the others sided. The 'Mahans' left enduring images by way of the presence of some of the 18 ships at Pearl Harbor. Both the fireball of the exploding USS ***Shaw*** (DD 373) and the drunken, debris-strewn ruins of the USS ***Cassin*** (DD 372) and USS ***Downes*** (DD 375) give vivid witness to the efficiency of that Sunday-morning onslaught.

Built at the same time in 1934 and 1935 were the eight enlarged 1,800-ton **'Porter' class** (DD 356) destroyers. Though these British-style leaders were some 12.2 m (40 ft) longer, their beam was scarcely increased and they were unable to accommodate the burden of four of the new twinned gunhouses, two of which were usually landed. Not to be beaten, the designers followed on with the five 1,850-ton **'Somers' class** (DD 381) destroyers of 1937 and 1938, which not only had eight guns but also a third quadruple torpedo tube mounting. These too suffered severe trimming of armament and this unhealthy trend toward overarming was reversed somewhat by a reversion to single 127-mm (5-in) guns. Even so, with an eye to Pacific operations, US destroyers were larger than British equivalents, faster and with greater endurance.

Specification

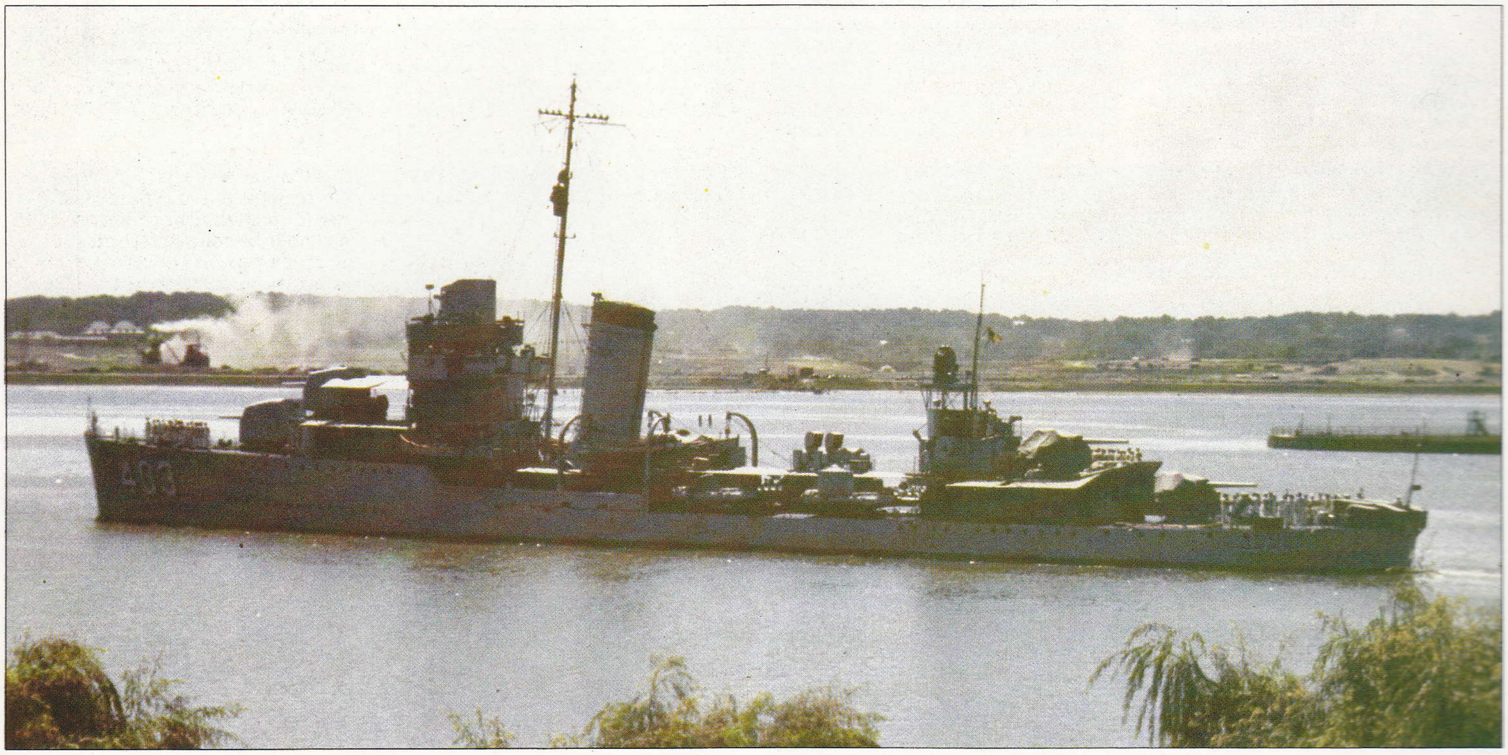
'Farragut' class (as built)
Displacement: 1,395 tons standard
Dimensions: length 104.01 m (341.25 ft); beam 10.41 m (34.16 ft); draught 2.69 m (8.83 ft)
Propulsion: two sets of geared steam turbines delivering 31916 kW (42,800 shp) to two shafts
Performance: maximum speed 36.5 kts
Armament: five single 127-mm (5-in) DP and four machine-guns, and two quadruple 533-mm (21-in) torpedo tube mountings
Complement: 250



The massive bulk of USS South Dakota *dwarfs the 'Mahan' class destroyers USS* Dunlap *and* Fanning, *recognizable by their shielded gun mounts forward and unshielded guns aft. Note that the inner of the two appears to have lost her bow in an accident.*

USA

'Gridley' class and 'Sims' class destroyers



USS Trippe, *a 'Benham' class destroyer, leaves Pearl Harbor in 1940. The 'Benhams' were derivatives of the 'Bagley' class, which were 'Gridleys' built by the Navy Yards. USS* Trippe *ended her days at Bikini in 1948, as an atom bomb target.*

Concurrent with the overarmed 'Somers', the US Navy built 22 **'Gridley' class** (DD 380) destroyers, smaller ships but much better balanced. The main battery was halved, four single 127-mm (5-in) L/38 guns saving considerable topweight for investment in an unprecedented 16-tube torpedo armament. The four quadruple mountings were placed sensibly low, at upper deck level, two per side. Later, some took triples and those on Atlantic duty usually landed two. A prominent feature of both the 'Gridleys' and their first derivatives, the 12 1,570-ton **'Sims' class** (DD 409) destroyers, was the single enormous funnel casing, trunked to serve two adjacent boiler spaces.

In the variant, one set of tubes was initially traded for an extra 127-mm (5-in) gun. Length was also increased by 1.98 m (6.5 ft) to allow for increased bunkerage but, even with the extra size and displacement, the wartime 'Sims' usually ended one gun and a set of tubes lighter. Both classes were high-powered by British standards, the extra length of the 'Sims' allowing for better lines and an extra knot of speed over the similarly-powered 'Gridleys'. Wartime losses were five 'Gridleys' and five 'Sims'.

Six 'Gridleys' were present at the debacle of Savo Island, their potential being wasted largely through faulty tactical doctrine. With 96 nominal torpedoes between them, for instance, only eight were recorded as launched, none hitting. This was in total contrast with the Japanese. USS ***Blue*** (DD 387) and USS ***Ralph Talbot*** (DD 390) were the two radar pickets whose unaccountable lack of attention, even after a warning, allowed Mikawa's cruiser force to penetrate the strait.

Of the follow-ons, the USS ***Sims*** (DD 409) herself was sunk before the crucial main action of the Coral Sea was actually joined. She and a fleet oiler were caught alone by Japanese dive-bombers which, inflicting fatal damage, also reported them incorrectly, allowing the American main force to approach unobserved.

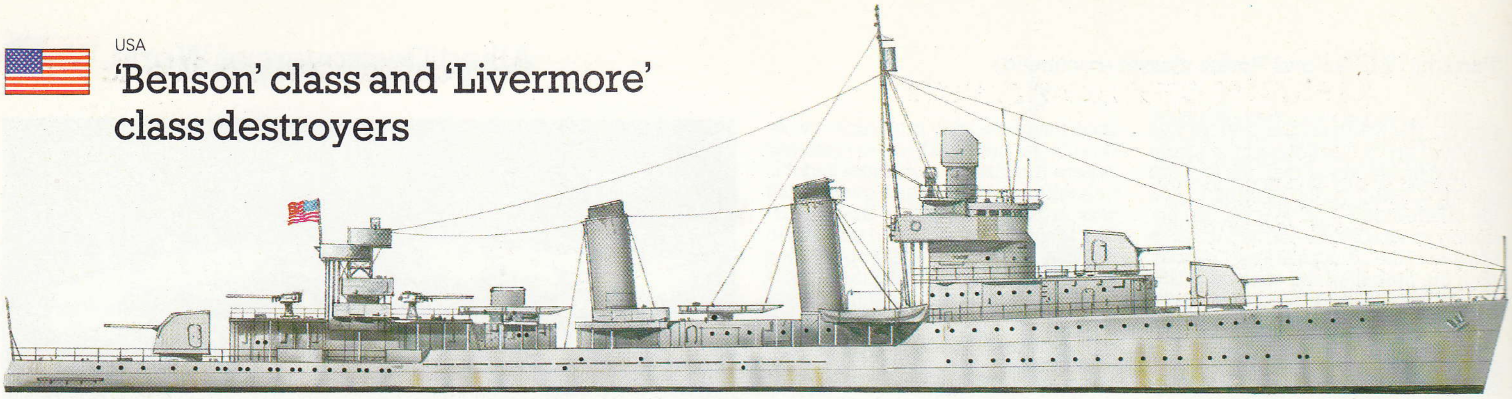
All pre-war-built destroyers were written off after August 1945 and no less than 11 from these two groups were expended at the Bikini nuclear site.

Specification

'Gridley' class (as built)
Displacement: 1,500 tons standard
Dimensions: length 104.11 m (341.58 ft); beam 10.97 m (36 ft); draught 2.97 m (9.75 ft)
Propulsion: two sets of geared steam turbines delivering 36539 kW (49,000 shp) to two shafts
Performance: maximum speed 36.5 kts
Armament: four single 127-mm (5-in) DP and five machine-guns, and four quadruple 533-mm (21-in) torpedo tube mountings
Complement: 250

USA

'Benson' class and 'Livermore' class destroyers



USS Benson *as she appeared prior to Pearl Harbor. Officially 1,600-ton destroyers, by the end of the war the class were usually displacing nearly 2,400 tons at full load.* Benson *was transferred to Taiwan in 1954, serving until 1975.*

On the same day in October 1939, the Boston Navy Yard launched four destroyers, the last pair of the 'Sims' series and the first two **'Benson' class** (DD 421) destroyers. Though the same hull and machinery was used, the later ships had the boiler spaces divided for improved damage control, necessitating a return to two funnels. A realistic armament was fitted in five 127-mm (5-in) guns and two quintuple sets of torpedo tubes, but even this was too much for wartime conditions, one gun and a set of tubes being landed. Only the first 24 hulls were completed with the full designed armament. The reduced fit was the most modest since the American destroyer adopted the 127-mm (5-in) gun.

This sound design was used for the first major series in the rapid expansion of the US Navy as it headed toward another war: 96 'Bensons' were built between 1939 and 1943, and though the last 64 were officially the separate **'Livermore' class**, there were only marginal differences, leading to the latter type having a slightly greater displacement.

They were the last American destroyers to have the European type of raised forecastle, with its characteristic rounded sheerstrake. Though this feature took a high freeboard farther aft and increased enclosed volume, it introduced a high stress concentration at the hance. Amidships, where British destroyers tended to be very wet, the Americans had bulwarks with continuous freeing ports running to a point abaft the after funnel. This was possible because the continuous topside casing required that torpedo tubes were set on one level higher than the upper deck. This arrangement alone accounted for many American destroyers not being able to carry their full designed armament.

On 10 April 1941, near Iceland, the USS ***Niblack*** (DD 424) became the first US destroyer during World War II to prosecute a suspected submarine contact by depth charging and in the following October, while covering convoy SC 48, the USS ***Kearny*** (DD 432) became the first US warship to be torpedoed.

Many of the later 'Bensons' were converted to high-speed destroyer/minesweeper (DMS) at the expense of a further gun and the remaining tubes.

Specification

'Benson' and 'Livermore' classes (as built)

Displacement: 1,620 tons standard

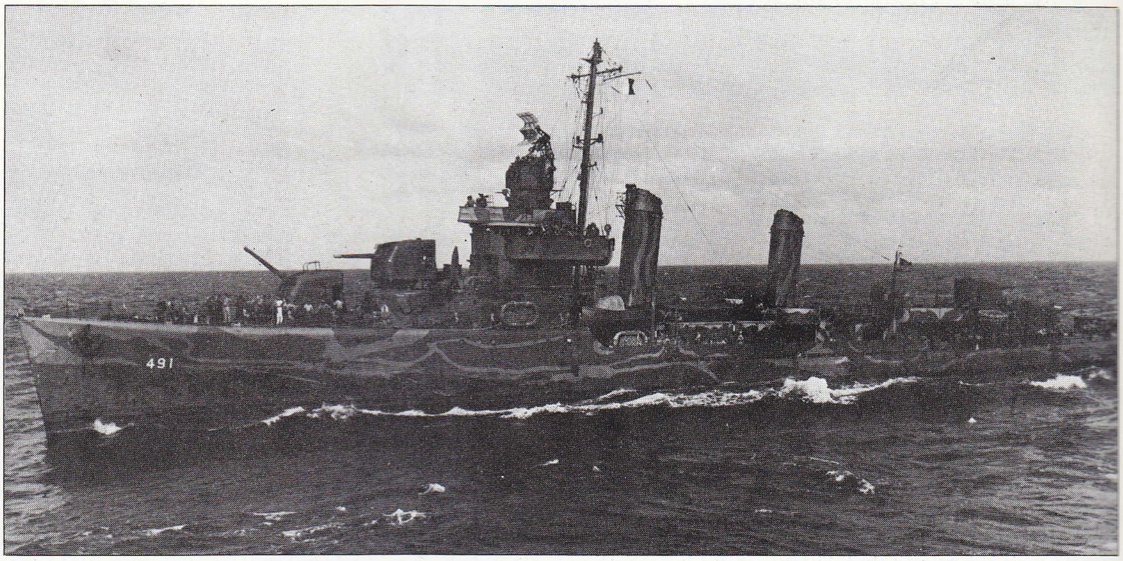
Dimensions: length 105.99 m (347.75 ft); beam 11.05 m (36.25 ft); draught 3.12 m (10.25 ft)

Propulsion: two sets of geared steam turbines delivering 37285 kW (50,000 shp) to two shafts

Performance: maximum speed 37 kts

Armament: five single 127-mm (5-in) DP and four machine-guns, and two quintuple 533-mm (21-in) torpedo tube mountings

Complement: 250



USS Farenholt *(DD 491) is seen from the carrier USS* Wasp *(CV-8) as she comes alongside to re-supply.* Farenholt *was to survive the fierce fighting in the Solomons, but the carrier was not so lucky. Within three weeks of the photo being taken, she was torpedoed to the south of Guadalcanal.*

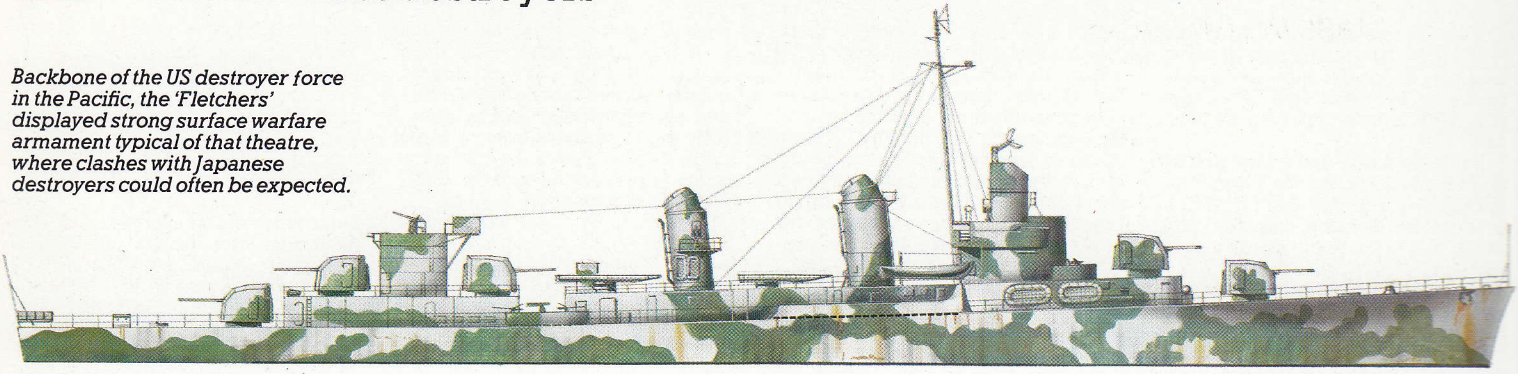
Left: A 'Benson' class destroyer cleaves the water as she forms part of the protection for an escort carrier. The 'Bensons', together with the almost identical 'Gleave' and 'Livermore' classes, were the first large-scale wartime US destroyer programme, 96 being built between 1939 and early 1943.

Above: USS Buchanan *(DD 484) replenishes from USS* Wasp *(CV-7) in June 1942.* Buchanan *survived the war to be sold to Turkey, where she served under the name* Gelibolu. *One of her main guns was removed, and her light AA replaced by four 76-mm (3-in) guns.*

USA

'Fletcher' class destroyers

Backbone of the US destroyer force in the Pacific, the 'Fletchers' displayed strong surface warfare armament typical of that theatre, where clashes with Japanese destroyers could often be expected.



Though the extensive 'Benson' class achieved its aim of putting the US destroyer-building industry onto a war footing, the design had limitations for a Pacific war, both in terms of endurance and its curtailed weapons fit. Even before the end of the programme, therefore, the first of an improved class were going into the water. The first two of this **'Fletcher' class** (DD 445) went down the ways in February 1942 and the last four of 175 ships on the same day in September 1944 at Puget Sound Navy Yard.

The designed armament of the 'Bensons' was carried by the new ships on a hull some 8.53 m (28 ft) longer and 0.91 m (3 ft) beamier. A great improvement was the substitution of licence-built 20-mm and 40-mm AA guns in place of the earlier 12.7-mm (0.5-in) machine-guns. No mainmast was fitted, and a further lowering of the centre of gravity was achieved through reversion to the flush-decked hull, also considered stronger. Funnels were shorter and, as a result, fitted with pronounced caps. Four units, in an unsuccessful experiment, had their no. 3 gunhouse and after tubes replaced by a catapult and scout aircraft.

Though the 'Fletchers' were generally sent quickly to the Pacific on completion, those built on the Atlantic seaboard saw some service there. Two of the earliest, for instance, the USS ***Fletcher*** (DD 445) and USS ***O'Bannon*** (DD 450), found themselves hurriedly diverted to the Windward Passage where two crossing convoys were being simultaneously assailed by U-boats. The existing scratch escort was led by an ex-US flush-decker, HMS *Churchill* but, even reinforced, they were unable to prevent the loss of five merchantmen. The *O'Bannon* fought also in the confused night action off Vella Lavella where three of six US destroyers, including four early 'Fletchers', tangled impetuously and unwisely with six Japanese destroyers involved in a garrison withdrawal. In a hail of torpedoes and gunfire the USS ***Chevalier*** (DD 451) was torn in two, the *O'Bannon* ploughing into her. The enemy *Yagumo* was immediately torpedoed herself but the sole American still under way, seeking still to close the enemy transports, was also hit by one of 16 torpedoes launched at her. Though only the *Chevalier* was actually lost, the Japanese had succeeded in their aim.

Specification

'Fletcher' class (as built)
Displacement: 2,050 tons standard
Dimensions: length 114.76 m (376.5 ft); beam 12.04 m (39.5 ft); draught 5.41 m (17.75 ft)
Propulsion: two sets of geared steam turbines delivering 44742 kW (60,000 shp) to two shafts
Performance: maximum speed 37 kts
Armament: five single 127-mm (5-in) DP, three twin 40-mm AA and four single 20-mm AA guns, and two quintuple 533-mm (21-in) torpedo tube mountings
Complement: 295

USS Stevens *(DD 479) leaves Charleston in December 1942 after completing her trials. By this time, a year after Pearl Harbor, American industry was becoming fully geared up for war, and 'Fletcher' class vessels were coming off the slips at a rate of four per month.*

Right: Many wartime American destroyers had long post-war careers, USS Cowell *seen here off Hawaii in 1963 serving until 1971. Acquired by Argentina in that year, she served as the* Almirante Storni *until 1982, when she was decommissioned.*

USA

'Allen M. Sumner' class and 'Gearing' class destroyers

To squeeze in more AA armament, the later 'Fletchers' needed to have their director tower lowered by way of compensation. The next design step was to give the hull an extra 45.7 cm (18 in) of beam and to adopt the new twinned 127-mm (5-in) L/38 gunhouse. Three of these occupied less axial length than the five singles of the 'Fletcher' class and enabled a six-gun main battery to be shipped with very little weight penalty. Less demand on space at the after end enabled the rearmost tubes to be brought well aft, improving weight distribution and freeing the area abaft the stacks for three quadruple 40-mm AA mountings. These effective weapons, used here for the first time in destroyers, thus enjoyed wide arcs and, being closer to amidships, reduced the ship motion that degraded accuracies. The result was the **'Allen M. Sumner' class** (DD 692).

Twelve of this 58-strong class were converted to destroyer-minelayers during construction, sacrificing both sets of tubes for a 100-mine capacity Some were further modified for radar-picket duty but, in warning the main body of the fleet against the approach of the *kamikaze*, they often became

USS Perkins*, in common with many of the 'Gearing' class, received extensive modification post-war, serving as a high-speed ASW carrier escort. Seen off Oahu in 1966,* Perkins *was transferred to the Argentine navy as the* Commodoro Py *in 1973. She served during the Falklands war.*

victims themselves. The USS ***Aaron Ward*** (DM 34) became a constructive total loss off Okinawa after having been struck by five, while the USS ***Laffey*** (DD 724) actually survived six such hits.

Yet more space and endurance requirements stretched the basic 'Sumner' hull by a further 4.27 m (14 ft) to produce the ***'Gearing' class*** (DD 710), which was to prove the ultimate stage in this long series of closely-related classes. Externally these larger ships were distinguishable primarily through their more widely-spaced funnels. With the threat from the rump of the Japanese surface fleet by 1945 significantly less than that posed by aircraft, it was also common to sacrifice a set of tubes for either a braced tripod bearing a surveillance radar antenna, or an extra quadruple 40-mm mounting. Only with peacetime did the new 76.2-mm (3-in) automatic guns, which could disintegrate a suicide aircraft, become generally available, being fitted usually during the extensive FRAM modernizations that converted destroyers to fast anti-submarine escorts, a primary function for which they were not intended.

Specification

'Allen M. Sumner' class (as built)

Displacement: 2,200 tons standard

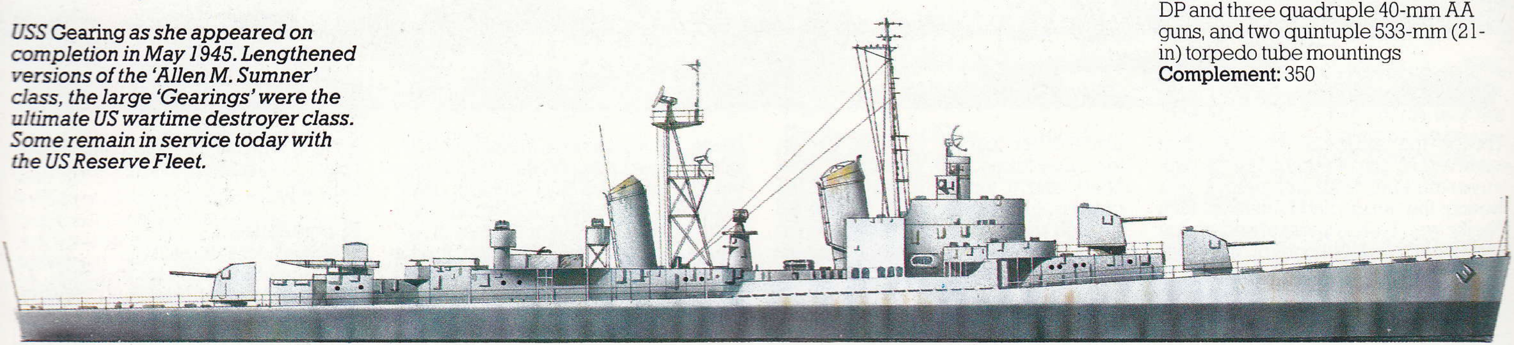
Dimensions: length 114.8 m (376.5 ft); beam 12.5 m (41 ft); draught 5.79 m (19 ft)

Propulsion: two sets of geared steam turbines delivering 44742 kW (60,000 shp) to two shafts

Performance: maximum speed 36.5 kts

Armament: three twin 127-mm (5-in) DP and three quadruple 40-mm AA guns, and two quintuple 533-mm (21-in) torpedo tube mountings

Complement: 350



USS* Gearing *as she appeared on completion in May 1945. Lengthened versions of the 'Allen M. Sumner' class, the large 'Gearings' were the ultimate US wartime destroyer class. Some remain in service today with the US Reserve Fleet.

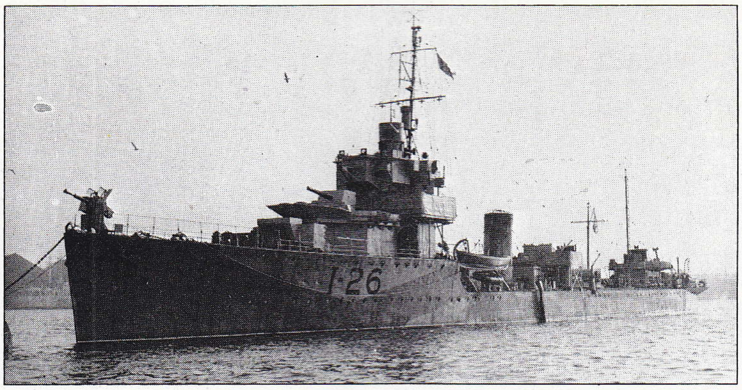
UK

'V' and 'W' class destroyers

Instantly recognizable through their two thick and thin funnels of unequal height, the **'V' class** and **'W' class** destroyers served the Royal Navy well for over a quarter of a century. Stemming from five new half-leaders ordered in 1916 to counter rumoured German construction, the class introduced superimposed guns both forward and aft, and featured both extra length and freeboard for improved seaworthiness. Their limitations were in shipping only four torpedo tubes and in needing to take the machinery of the smaller Admiralty 'R' class but, though a little underpowered, the first of the class, HMS ***Valkyrie***, still made nearly 35 kts on trials in June 1917.

Once proved, the design was extended by 25 'V' class and then 25 'W' class destroyers, the latter differing mainly in adopting two triple torpedo tube mountings. Stability proving no problem, the ***'Modified V & W' class*** then followed (an order for 54 ships being placed in early 1918) to mount 119.4-mm (4.7-in) guns in place of the earlier classes' 102-mm (4-in) weapons, their projectiles weighing 22.7 kg (50 lb) instead of 15.9 kg (35 lb). With the Armistice, most were cancelled, only HMS ***Vansittart***, HMS ***Venomous***, HMS ***Verity***, HMS ***Veteran***, HMS ***Volunteer***, HMS ***Wanderer***, HMS ***Whitehall***, HMS ***Whitshed***, HMS ***Wild Swan***, HMS ***Wishart***, HMS ***Witch***, HMS ***Witherington***, HMS ***Wivern***, HMS ***Wolverine***, HMS ***Worcester*** and HMS ***Wren*** being built. One was lost during World War I and two more in the Baltic in 1919. The survivors formed the backbone of the fleet destroyer strength for most of the 1920s and, all but for a further five, went on to their second war in 1939.

Between 1938 and 1941 16 ships, from various groups, were converted to AA escorts (**'Wair' class**) by the substitution of two twin HA 102-mm (4-in) guns and a quadruple 2-pdr in place of the original armament. Another 20 were suitable for conversion to long-range escorts (LRE) by removal of the forward boiler and funnel to give enhanced bunker capacity. The original armament was cut back in favour of an ahead-firing Hedgehog and extra depth charges and, though now capable of under 25 kts, they could cross the Atlantic without refuelling. Most of the remainder, unsuitable for similar conversion, became short-range escorts (SRE) with a wide variety of armament but retaining their machinery. Three ships were lost in World War II.



Above: In 1945, HMS* Watchman *was serving as a long-range escort, with her forward boiler and funnel removed to allow for extra fuel and 'A' gun replaced by an ahead-firing Hedgehog anti-submarine mortar unit. With the extra fuel she had transatlantic range.

Specification

'Modified V & W' class (as built)

Displacement: 1,120 tons standard and 1,505 tons full load

Dimensions: length 95.1 m (312 ft); beam 8.99 m (29.5 ft); draught 3.28 m (10.75 ft)

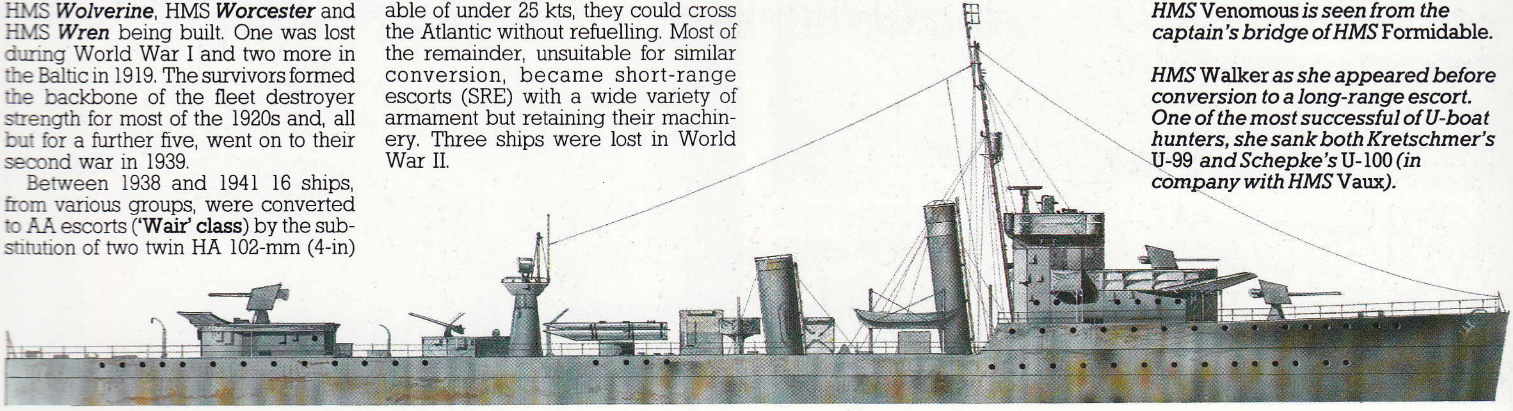
Propulsion: two sets of geared steam turbines delivering 20134 kW (27,000 shp) to two shafts

Performance: maximum speed 34 kts; endurance 6437 km (4,000 miles) at 15 kts

Armament: four single 119.4-mm (4.7-in) and one 76.2-mm (3-in) guns, and two triple 533-mm (21-in) torpedo tube mountings

Complement: 134

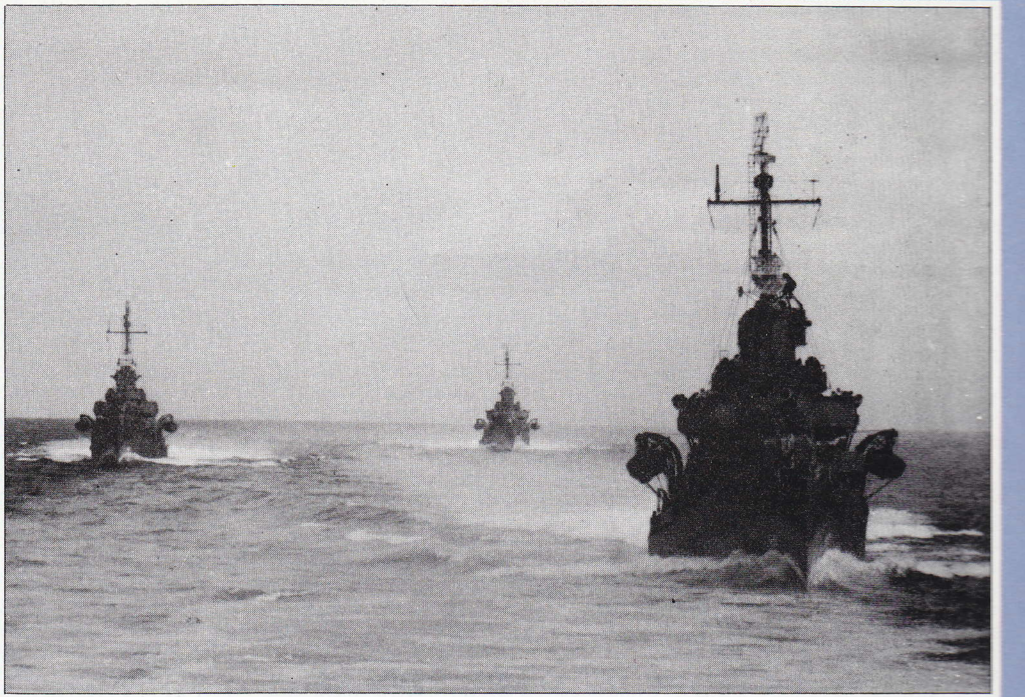
***HMS* Venomous *is seen from the captain's bridge of HMS* Formidable.**



HMS* Walker *as she appeared before conversion to a long-range escort. One of the most successful of U-boat hunters, she sank both Kretschmer's U-99 and Schepke's U-100 (in company with HMS* Vaux*).

The Battle of Vella Lavella

Unlike the British experience of war in the West, the Pacific war saw a significant use of destroyers in their original attack role, especially in the bitter campaign for the Solomons.



O'Bannon, Chevalier *and another destroyer of Desron (Destroyer Squadron) 21 head for the Solomons, where within months they were to see violent action.*

Though not one of World War II's larger actions, Vella Lavella typifies the vicious night encounters of the Solomons campaign and illustrates why both American and Japanese destroyers remained 'traditionally' armed. Some 320 km (200 miles) from Guadalcanal, the island of Vella Lavella was invaded by the Americans in August 1943 and, by the following month, the comparatively quiescent Japanese garrison was penned into the north western corner. The Japanese planned to evacuate them on the night of 6-7 October in three destroyers and some auxiliaries covered by six seasoned destroyers of the 'Tokyo Express' under Rear Admiral Matsuji Ijuin in the destroyer *Akigumo*.

The force was sighted by air reconnaissance and its position and likely destination signalled to Captain Frank R. Walker, commanding the destroyers USS *Selfridge, USS Chevalier* and USS *O'Bannon*, who was directed to rendezvous with three more destroyers off the likely Japanese evacuation point. Walker knew that he, in turn, had been sighted by an enemy aircraft but when, at 22.30, radar contacts were reported to the west he immediately advanced toward what he knew to be a greatly superior force even though his reinforcement had not yet arrived.

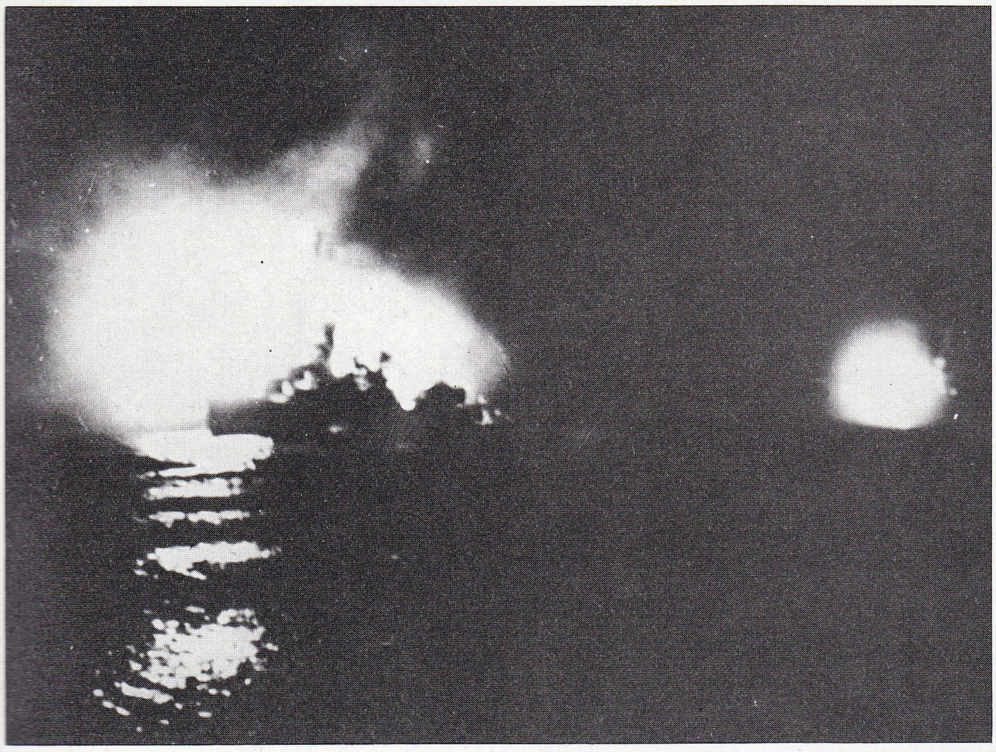
With the evacuation force keeping clear, Ijuin's destroyers split four and two and moved into two roughly parallel columns. They almost crossed Walker's 'T' at 22.45 but, still sizing up the strength of the Americans, took no action. His mind apparently made up, the Japanese commander made two abrupt changes of course but put his force into some confusion. At the second change of course, the range had dropped to about 6400 m (7,000 yards) and Walker opened the bowling with the Japanese tactic of a torpedo salvo: 14 torpedoes were fired, the Japanese at the time largely masking each other's fire. It was a dark night, lit by a quarter moon but punctuated by rain squalls and both sides were moving at high speed. With the American torpedoes running the nearest Japanese destroyer, the *Yagumo*, broke formation and now at only 2745 m (3,000 yards) range, turned three parts of a circle, launching eight torpedoes as she turned. Walker's ships smothered her with gunfire while Ijuin, his manoeuvre frustrated, pulled his remaining three ships into line ahead and turned 16 points under cover of smoke.

At 23.05 the impetuous *Yagumo* was hit by an American torpedo but, almost simultaneously, the *Chevalier*, second in the US line, was struck by one from the *Yagumo*. Her bows gone, she slewed around at almost full power and was promptly rammed by the tail-ender, *O'Bannon*, who was thus also immobilized.

Walker, now alone in the *Selfridge*, bore on after the pair of Japanese yet unengaged. About six minutes before, however, these had launched their full complement of 16 torpedoes and the *Selfridge* ran into them. One exploded beneath 'B' gun, removing the complete bow section and leaving the heavy twin mounting hanging by a hair over the mangled forward plating.

Warned of the approach of American reinforcements, Ijuin chose to quit while he was winning and, having launched his remaining torpedoes at 13-km (8-mile) range toward his now-stationary adversaries, he withdrew at high speed. It was 23.17 and the whole affair had taken only 22 minutes.

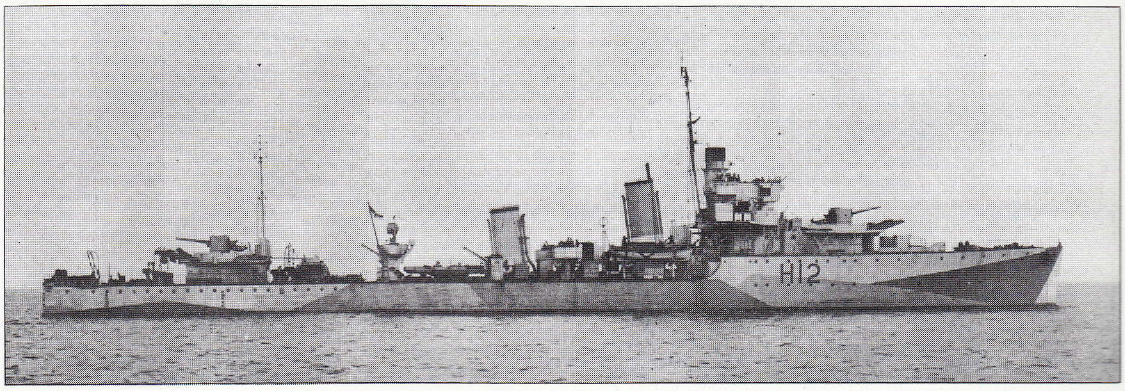
Only 15 minutes later Walker's reinforcements arrived, finished off the stricken *Chevalier* and covered the withdrawal of the other two. Materially honours were even, with one ship lost to each side, but the Japanese gained the victory in that, keeping the Americans occupied, they permitted their evacuation force to perform its mission without disturbance.



The naval fighting around the Solomons was notable for the high proportion of actions which took place at night. Vella Lavella was no exception, with the Japanese gaining a tactical victory.

UK

'A' class destroyer



HMS Achates ***was seriously damaged by mining during the retreat from Norway, but after extensive rebuilding went on to glory in defending a Soviet-bound convoy from the*** Lützow ***and the*** Admiral Hipper***.***

Not until the mid-1920s did the Admiralty deem it necessary to order a pair of prototype destroyers with a view to replacing war-built tonnage. These, HMS ***Amazon*** and HMS ***Ambuscade***, were heavily based on the 'Modified V & W' class but with a contract speed of 37 kts. This was possible only by the extra power developed by the new Admiralty three-drum boiler and steam superheat. With small modifications, the design of this pair formed the basis of a full **'A' class** of eight and a leader (HMS ***Codrington***, lost in 1940) ordered in the 1927 programme for completion in 1929 and 1930. These were followed, alphabetically, by a flotilla per year, with surprisingly few 'improvements' up to the **'I' class** boats of 1935. It was an excellent design: simple yet robust, with an austere elegance that influenced foreign construction.

Destroyers, now larger and more capable, worked in smaller groups than before, each flotilla having a leader, enlarged for Captain (D)'s staff and carrying an extra gun, largely of prestige value, between the funnels. The armament of the 'A' class destroyers was improved over that of their prototypes by the provision of extra elevation to the guns and quadruple in place of triple torpedo tube banks. To improve wartime topweight margins, 'Y' gun was generally landed, over 2 m (6.6 ft) were lopped from the after funnel, and the tall mainmast was replaced by a short jigger.

In June 1940, HMS ***Ardent*** and HMS ***Acasta*** perished gallantly off the Norwegian coast in a vain attempt to defend the carrier HMS *Glorious* from the *Scharnhorst* and *Gneisenau*, of which the former was torpedoed. HMS ***Achates*** was also mined off Norway, her whole forward section needing to be rebuilt. She, too, was lost in valiant circumstances during the desperate action off North Cape on the last day of 1942: while Sherbrooke and four 'A' class destroyers kept at bay a German 'pocket battleship', a heavy cruiser and six large destroyers, the *Achates* shielded their convoy with smoke, virtually until going under from the effects of 203-mm (8-in) shell damage. The convoy was saved by the timely arrival of two British 152-mm (6-in) cruisers. The other 'A' class destroyers were HMS ***Acheron*** (lost in 1940), HMS ***Active***, HMS ***Antelope***, HMS ***Anthony*** and HMS ***Arrow***.

Specification

'A' class (as built)

Displacement: 1,330 (leader 1,520) tons standard and 1,770 tons full load

Dimensions: length 98.5 m (323 ft); beam 9.83 m (32.25 ft); draught 2.16 m (7.08 ft)

Propulsion: two sets of geared steam turbines delivering 25354 kW (34,000 shp) to two shafts

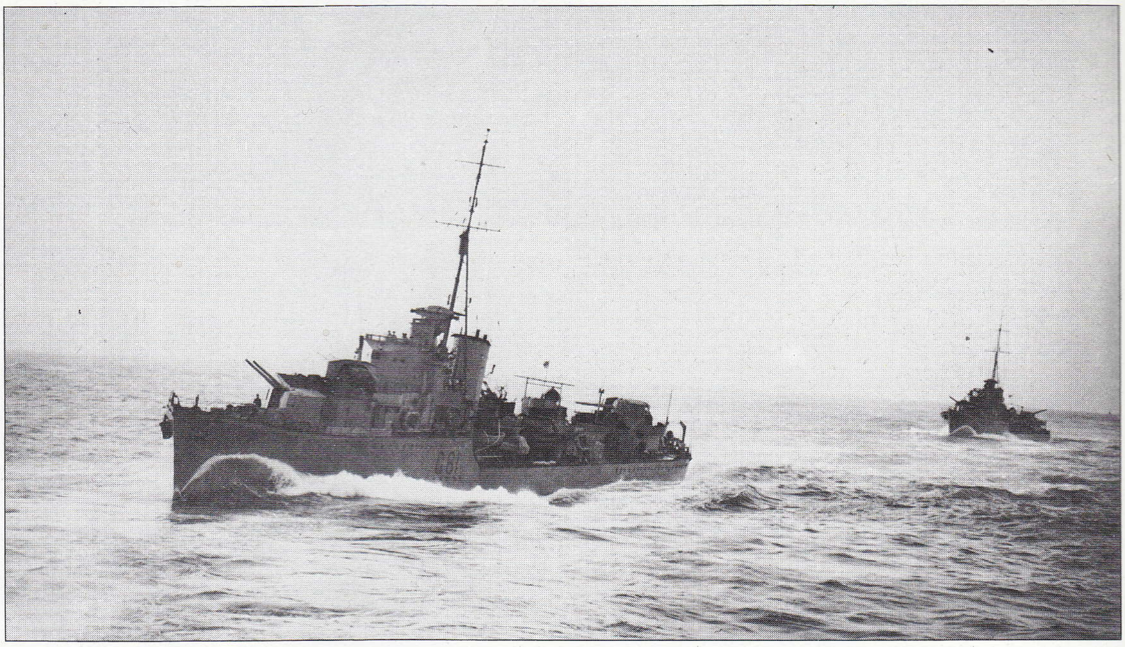
Performance: maximum speed 35 kts; endurance 8851 km (5,500 miles) at 15 kts

Armament: four (leader five) single 119.4-mm (4.7-in) and two single 2-pdr 'pompom' AA guns, and two quadruple 533-mm (21-in) torpedo tube mountings

Complement: 138

UK

'J' class, 'K' class and 'N' class destroyers



HMS Javelin ***rejoins her flotilla after a special mission. Although severely damaged on more than one occasion,*** Javelin ***was one of only two 'J' class to survive the war. Altogether 13 of 24 'J', 'K' and 'N' class were lost.***

The 16 'Tribals' were a class apart but, in answering directly the increasing size and power of foreign destroyers, they were also a tacit acknowledgement of the need for a larger general-purpose fleet destroyer for the Royal Navy. Following the extended 'A' to 'I' classes of flotillas, a new design was agreed only after considerable debate. Visually, it departed considerably from earlier practice. Two boilers replaced the earlier three, allowing for a single funnel, generously proportioned to balance the profile. Three of the twin 119.4-mm (4.7-in) gunhouses used in the 'Tribals' were shipped, allowing space for a second bank of torpedo tubes of the quintuple pattern introduced with the 'I' class. This heavy torpedo armament showed a continuing commitment to a form of attack that, in the event, was used only seldom by the British. To improve the firing arc of the after gun mounting a mainmast was not stepped, the W/T aerials being strung from the tripod foremast to a braced ensign staff.

Despite the improved angles of elevation on the main battery, the primary AA weapon was still the quadruple 2-pdr 'pompom'. Sited abaft the funnel, it had a better field of fire than on the preceding two-funnelled ships yet still had a wide blind sector forward. As in most British destroyers, there was a constant struggle to keep topweight within acceptable bounds.

Eight **'J' class** and eight identical **'K' class** destroyers were ordered in 1937, followed by eight similar **'N' class** ships in 1939 (the 'L' and 'M' classes already being under construction). Of the total of 24 ships, no less than 13 were sunk, eight significantly to aircraft.

Five of the 'N' class were Australian-manned, two Dutch and one Polish. They were of remarkably tough construction: HMS ***Javelin***, for instance, survived both a major collision and, at a later date, being parted from both bow and stern sections by a salvo of enemy torpedoes. The saga of the leader HMS ***Kelly*** is related elsewhere, and the other units were HMS ***Jervis*** (leader), HMS ***Jackal***, HMS ***Jaguar***, HMS ***Janus***, HMS ***Jersey***, HMS ***Juno***, HMS ***Jupiter***, HMS ***Kandahar***, HMS ***Kashmir***, HMS ***Kelvin***, HMS ***Khartoum***, HMS ***Kimberley***, HMS ***Kingston***, HMS ***Kipling***, HMS ***Napier*** (leader), HMS ***Nerissa***, HMS ***Nestor***, HMS ***Nizam***, HMS ***Noble***, HMS ***Nonpareil***, HMS ***Norman*** and HMS ***Nepal***.

Specificiation

'J', 'K' and 'N' classes (as built)

Displacement: 1,690 (leaders 1,695) tons standard and 2,330 tons full load

Dimensions: length 108.66 m (356.5 ft); beam 10.87 m (35.66 ft); draught 2.74 m (9 ft)

Propulsion: two sets of geared steam turbines delivering 29828 kW (40,000 shp) to two shafts

Performance: maximum speed 36 kts; endurance 10139 km (6,300 miles) at 15 kts

Armament: three twin 119.4-mm (4.7-in) and one quadruple 2-pdr 'pompom' guns, and two quintuple 533-mm (21-in) torpedo tube mountings

Complement: 183

The *Kelly* in Action

HMS* Kelly *caught the public imagination in a way that few other ships or ship's companies did. It would be as well to examine the record of such a vessel, no more or less worthy than many other destroyers, in order to discover the tremendous strain on both men and machinery that was inflicted by the bitter struggles of the war at sea.

Many destroyers achieved more than HMS *Kelly*, and certainly the great majority had longer careers, yet this ship (whose lifespan was precisely 21 months from handing-over to sinking) had an uncanny knack of being where trouble was, and was seldom out of the public eye.

With the 'Tribals' widely criticized as being too large and too expensive, the 16 'J' and 'K' class ships were slimmed down, with more of the traditional emphasis on torpedoes and less on guns. The classes were ordered in March and April 1937 for delivery by July 1939, an urgent schedule that reflected the growing certainty of war, and was possible only by the involvement of eight separate shipyards.

Both leaders went to the 'Geordie' yard of Hawthorn Leslie. As was the custom both were named after notable commanders but, where the 'J' class destroyer leader took the historically renowned name *Jervis*, the 'K' class leader took the name *Kelly*, after Admiral of the Fleet Sir John Kelly, one-time commander-in-chief of the Atlantic Fleet, who had died in 1936. This was something of a precedent and the name has never been repeated, but the ship acquired her dashing reputation from the bravura personality of her first (and only) captain, Lord Louis Mountbatten. He commissioned the ship as leader of the 5th Destroyer Flotilla in August 1939, and she was still working up at Portland when war was declared. The first warlike task was to turn-to, captain included, and cover the glossy perfection of the peacetime paintwork with the drab, matt grey known to generations of brush-wielding sailors as 'Crabfat'. The very next day a (probably imagined) periscope was roundly depth charged in Weymouth Bay. War had commenced.

A week later the *Kelly* did a high-speed return dash to Le Havre to pick up the Duke and Duchess of Windsor from French exile and to bring them to Portsmouth. She immediately proceeded to Plymouth, and within days was at sea on the melancholy task of rescuing survivors of the sunken carrier HMS *Courageous*. A couple of months of regulation misery were then spent working out of Scapa before a welcome return to the Tyne for a spell of rest. This was interrupted by an emergency call from a mined tanker but, in going alongside, the *Kelly* touched off another mine, suffering considerable damage aft. She re-entered the Tyne at the end of a tow line and spent two months in drydock. Emerging in February 1940 she returned to Scapa but, shortly after this and while escorting a convoy, she ran foul of the larger HMS *Gurkha* in a snowstorm. The glancing collision caused damage sufficient to put the *Kelly* in dock again, this time on the Thames.

She was repaired in time for the end of the unhappy military campaign in Norway.

Dive-bomb attack

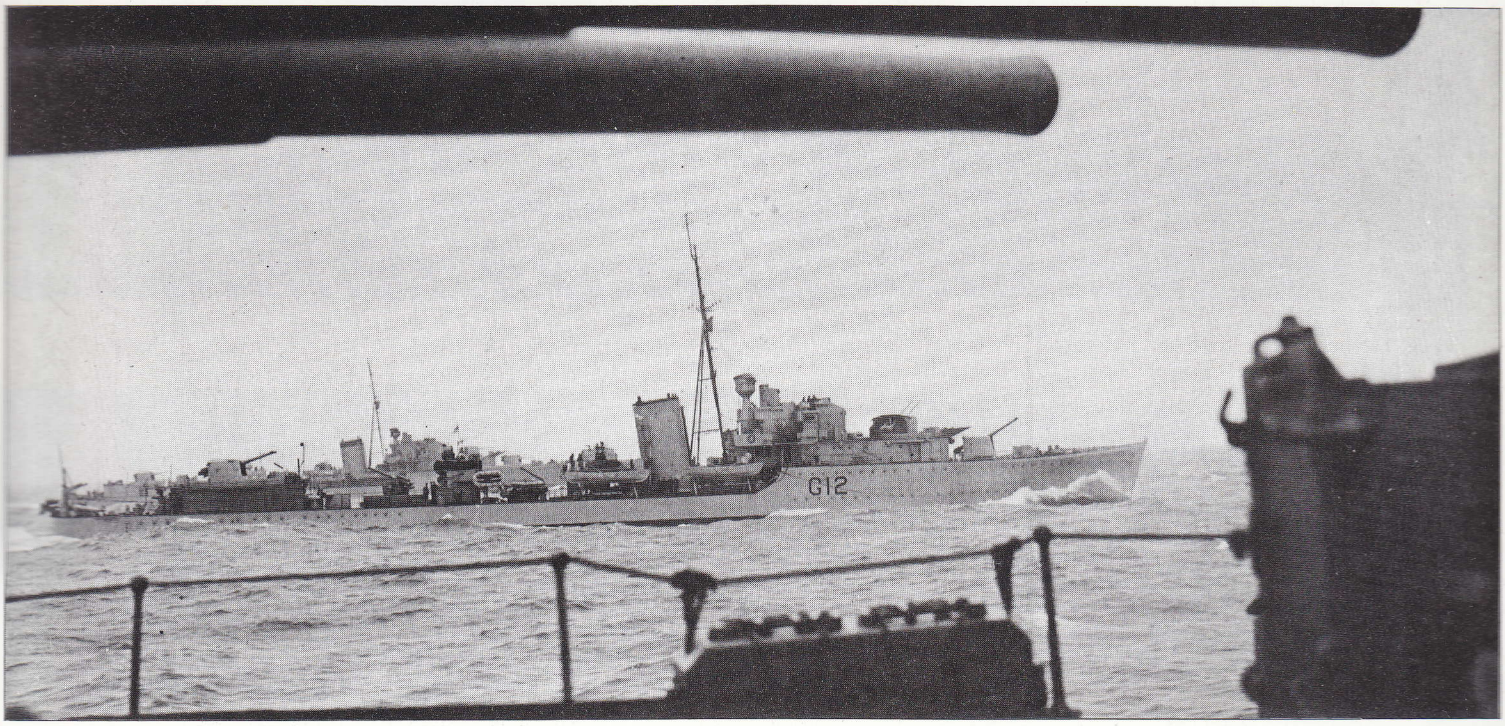
As one of six destroyers, *Kelly* proceeded to Namsos to evacuate an Anglo-French force, but they were heavily dive-bombed on 3 May, losing both HMS *Afridi* and the French *Bison*. Destroyers were already proving vulnerable to this form of attack.

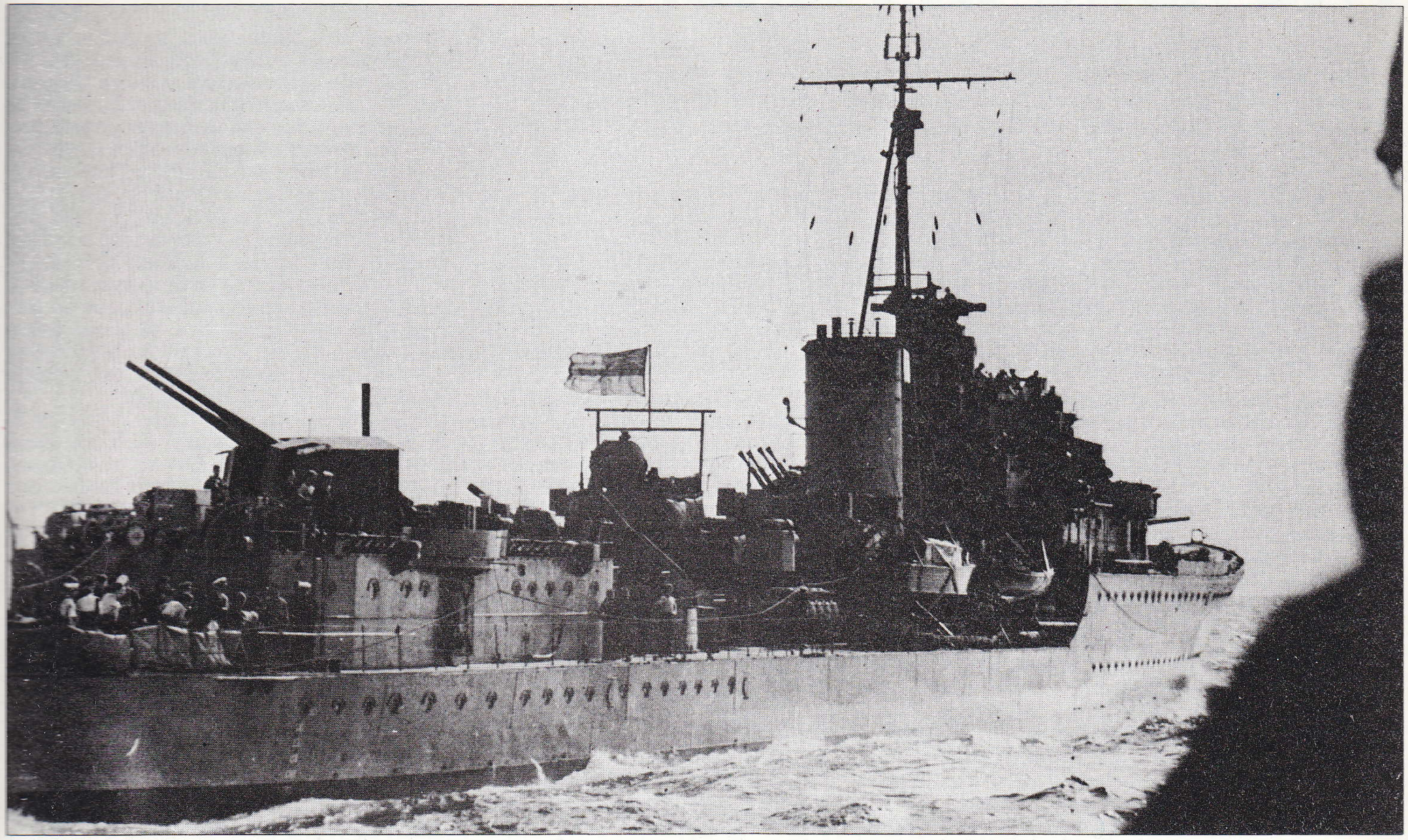
Only a week later, Germany invaded the Low Countries and the cruiser HMS *Birmingham* sailed to intercept an enemy minelaying force reported west of the Kattegat. Of the seven destroyers in company two, the *Kelly* and HMS *Kandahar*, were detached to investigate a reported U-boat contact. This proved unprofitable and, joined by the older HMS *Bulldog*, the destroyers made after the main force. Darkness had fallen when suddenly, totally without warning, a torpedo knifed into the *Kelly*'s port side. It struck right at the ship's weak spot, the adjacent boiler spaces. In a roaring cloud of live steam the destroyer ground to a halt, the forward boiler room open to the sea with a 15-m (50-ft) gap stretching from keel to waterline. Grinding ominously in the lumpy sea, the ships' longitudinal framing held her together. She settled to starboard but, once the adjacent bulkheads had been thoroughly shored, showed no immediate signs of sinking. The *Bulldog* came alongside and passed a tow line with the *Kelly*, once moving, using emergency steering to reduce her tendency to yaw while the crew worked feverishly to heave overboard all movable topweight.

While there had, as yet, been no clue as to the origin of the torpedo (it had actually been fired by *S.31*, one of four 'E-boats' in the area), the mystery was resolved about midnight when another boat, seeking to find and finish off the cripple, came roaring out of the night at high speed. It sideswiped the labouring *Bulldog* and raked down the length of the *Kelly*'s starboard side, which was nearly level with the water; davits, boats and guardrails were exchanged for shattered timber as the boat careered along the destroyer before disappearing into the gloom as suddenly as it had arrived. Not a shot had been fired.

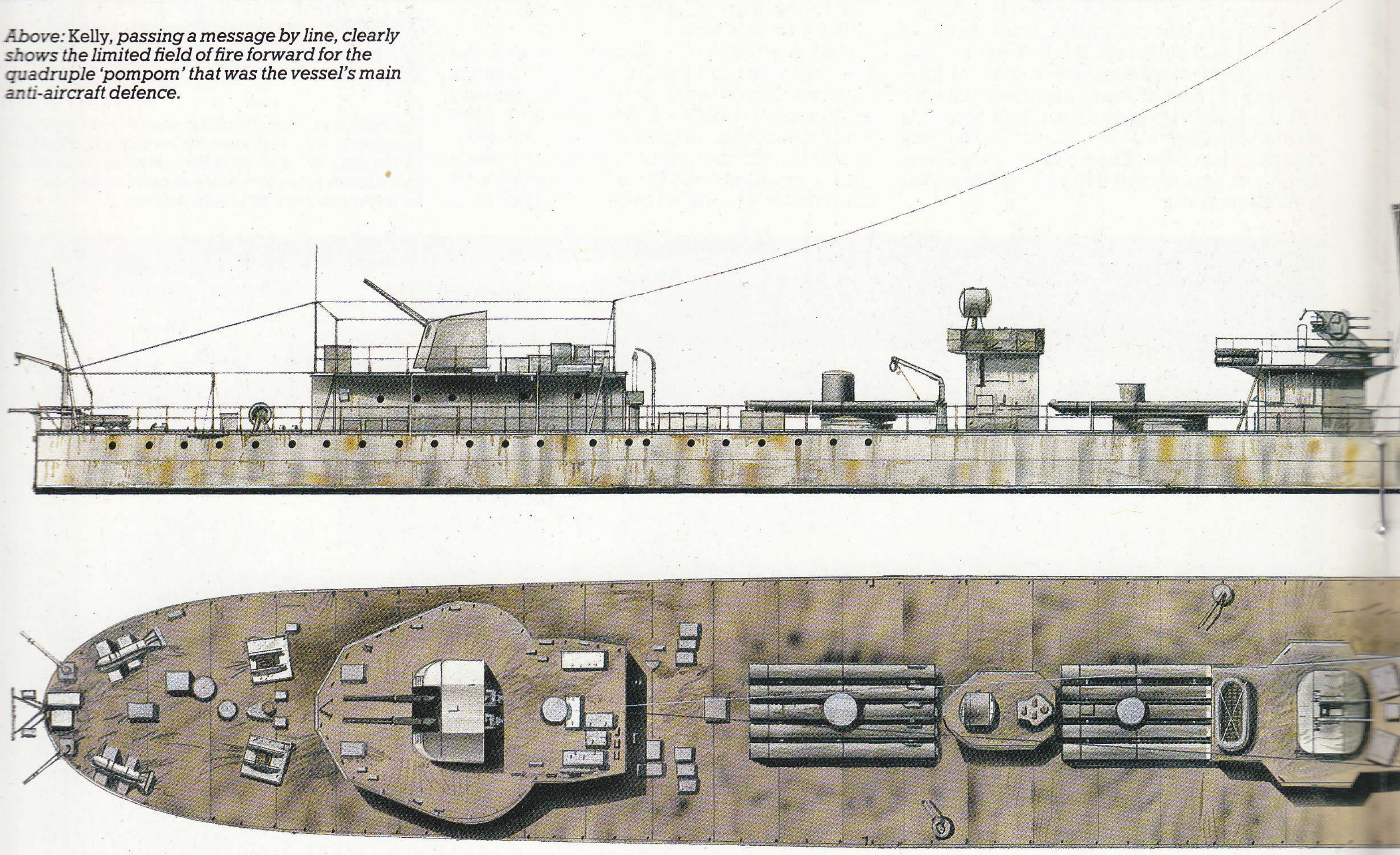
Throughout the following day the slow procession continued with a changed escort. The *Kelly*'s sorely-tried bulkheads were leaking; with no power to operate pumps, she was slowly settling and unnecessary crew were taken off. The arrival of a tug speeded things up and eventually, with only a skeleton crew headed by Mountbatten, the weary flotilla sighted the Tyne piers. It had taken nearly four days.

The Fifth Destroyer Flotilla is seen at sea with HMS Kashmir *and* Kelly *in view.* Kelly*, distinguishable by the dark band around her funnel top, was fitted as a destroyer leader, and her extra command facility made her marginally heavier.*



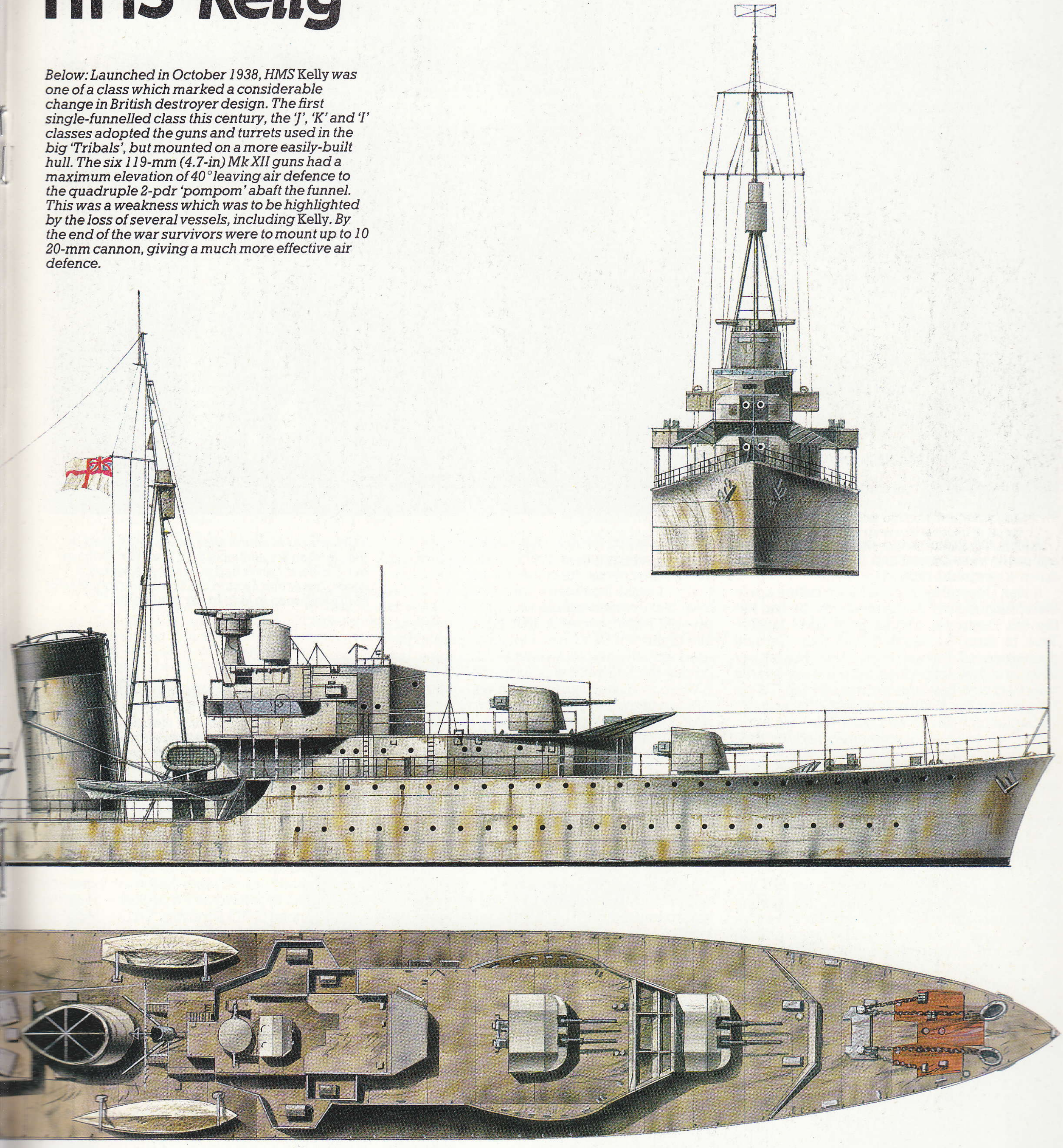


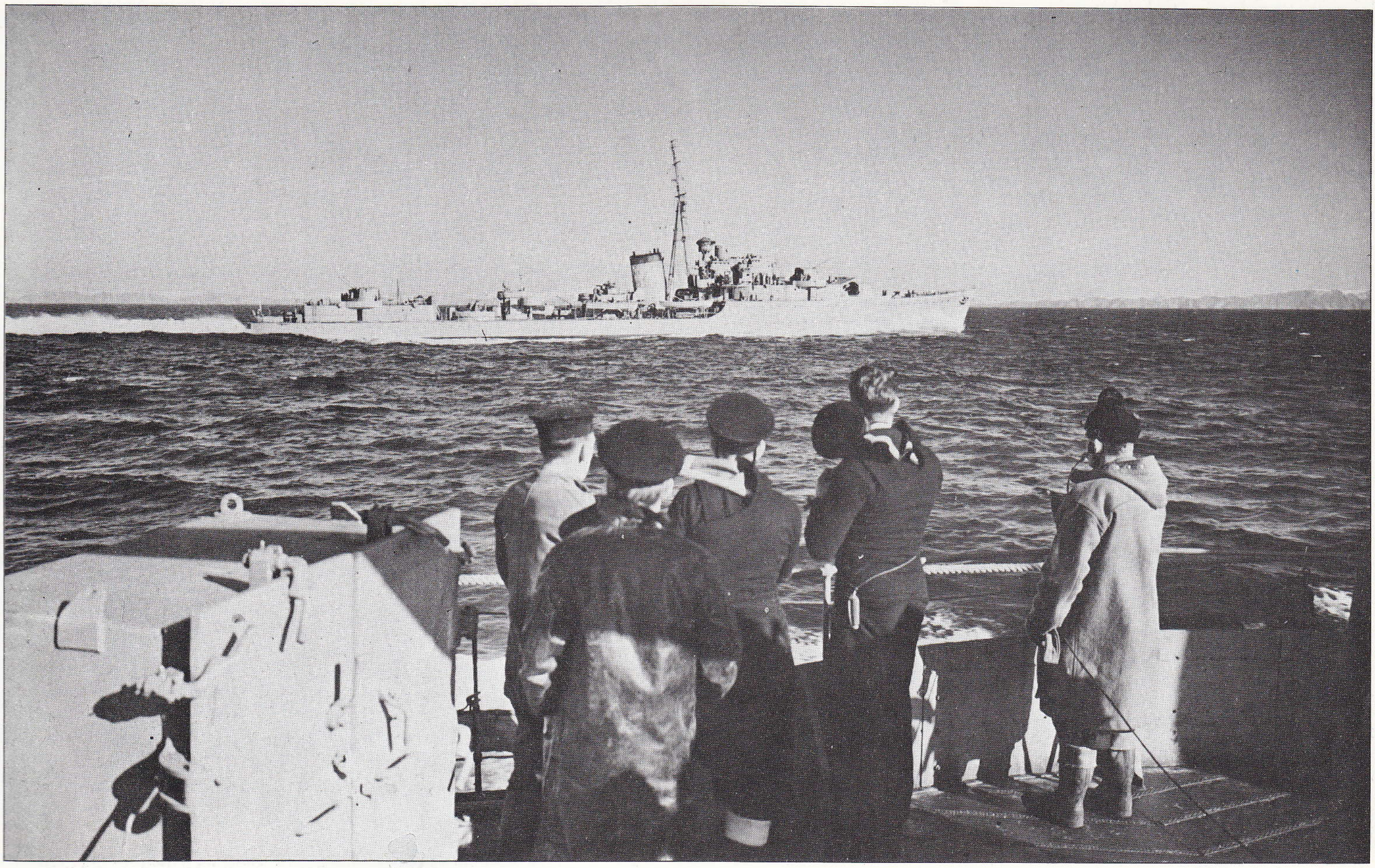
Above: Kelly*, passing a message by line, clearly shows the limited field of fire forward for the quadruple 'pompom' that was the vessel's main anti-aircraft defence.*



'K' Class Destroyer Leader HMS Kelly

Below: Launched in October 1938, HMS Kelly *was one of a class which marked a considerable change in British destroyer design. The first single-funnelled class this century, the 'J', 'K' and 'I' classes adopted the guns and turrets used in the big 'Tribals', but mounted on a more easily-built hull. The six 119-mm (4.7-in) Mk XII guns had a maximum elevation of 40° leaving air defence to the quadruple 2-pdr 'pompom' abaft the funnel. This was a weakness which was to be highlighted by the loss of several vessels, including* Kelly*. By the end of the war survivors were to mount up to 10 20-mm cannon, giving a much more effective air defence.*





Kelly ***returns to action after being torpedoed by the German*** **Schnellboote S.31.** ***The six months in her builders' hands had made her ready once again, but action around the beleaguered island of Malta was soon to lead to her final battle.***

Again she entered her builder's dock, 27 of her crew were buried and the Tynesiders got down to a virtual rebuild.

It was December before Mountbatten again commissioned her. In the meantime he had led the 5th Destroyer Flotilla from HMS *Javelin*. True to form, he tangled with four German destroyers off Plymouth on 28-29 November 1940, and two torpedoes from a salvo neatly removed both bow and stern of his ship. To the *Javelin*, as to the *Kelly* before, came the enquiry 'Is Captain (D) alive?' and back went the same reply 'Yes, you are not in command of the Flotilla yet.'

Spring 1941 found a newly worked-up *Kelly* and her flotilla at Plymouth. Life was eternally busy but without major event until, in April, they were ordered to Malta. Existence in the Mediterranean was, at that time, precarious: the Greek campaign had collapsed and, at considerable cost, the navy was evacuating 50,000 troops to Crete. With the Sicilian-based Luftwaffe reducing Malta slowly to dust and enemy land forces tightening their grip on the significant islands in the Aegean, the future of both Crete and Malta was looking less than bright.

Smaller naval units were still working out of Valletta, and the 5th Destroyer Flotilla formed part of the Malta striking force, Force K, that nightly contested enemy efforts at convoying supplies from Italy to his armies in North Africa. Returning from one of these sweeps on 2 May, the *Kelly* saw her sister destroyer HMS *Jersey* mined at the entrance to the Grand Harbour; she was brought in, but was a constructive total loss.

From the middle of May it was apparent that Crete's time had come. The Royal Navy patrolled in sufficient force to deter a landing by sea, but with superiority in every other department the enemy chose to come by air. His paratroops fought fanatically with nowhere to retreat, but every available warship was at sea to prevent reinforcements arriving. On consecutive nights 5th Destroyer Flotilla ships slaughtered virtually helpless convoys of caiques, but by day the Luftwaffe was supreme. On 21 May HMS *Juno* disappeared within two minutes of taking a heavy bomb. Next day it was the turn of HMS *Greyhound*, together with the cruisers HMS *Fiji* and HMS *Gloucester*, who had fought until their AA ammunition was exhausted.

Maleme bombardment

On the same grim day the *Kelly* arrived from Malta, accompanied by HMS *Kashmir*, HMS *Kelvin*, HMS *Kipling* and HMS *Jackal*. Together with the *Kashmir* and *Kipling*, she was directed to bombard Maleme airfield after dark. Though the last named fell out as a result of mechanical trouble, the operation began well with the interception and destruction of a pair of heavily-loaded caiques. Unfortunately the short, late-spring night was nearly spent by the time the British ships' mission was done.

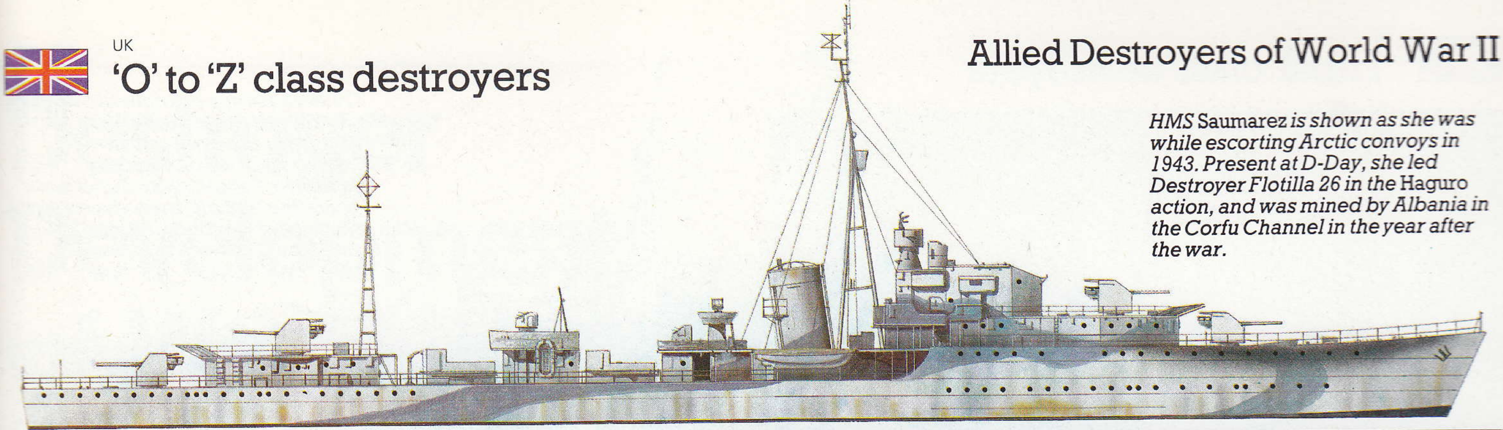
With the main strength of the fleet recalled earlier to Alexandria, they were on their own. Dawn found them barely clear of the island but an early high-level bombing was easily evaded. This attack was, however, closely followed-up by the dreaded dive-bombers: 24 Ju 87s of 1 Stukageschwader, operating from airfields only minutes away in the Peloponnese, approached from astern. Both ships manoeuvred violently, with 2-pdrs, 12.7-mm (0.5-in) machine-guns, 20-mm cannon and even the 119.4-mm (4.7-in) guns on opportunity throwing everything at an enemy who attacked from all quarters. Within minutes the *Kashmir* was broken-backed, her smoke-shrouded hulk barely losing its way before it was the *Kelly*'s turn. Turning at full speed, she was heeling when squarely hit aft of amidships. Such was the impact that she did not recover, rolling over onto her beam ends and then capsizing completely to port, hanging thus for a long 30 minutes with many of her crew trapped inside before sliding under in 1,500 fathoms.

Fortunately, the *Kipling* had overcome her mechanical problems and was close enough to pick up a total of 279 survivors. To the discredit of the enemy, she was heavily bombed and strafed throughout, several men being killed. Still under attack, she withdrew and successfully reached Alexandria the next day.

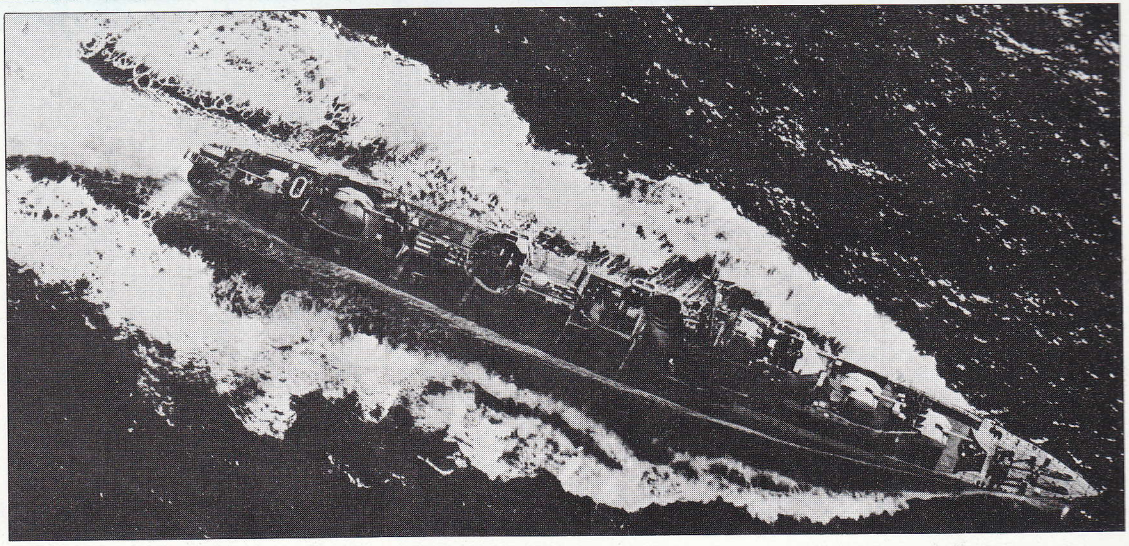
The loss of the ships emphasized the varying fortunes of the war at sea, for they had been sunk south of Gavdo Island in the same spot that saw, less than two months earlier, the opening skirmish of the Battle of Matapan. The very next day, 24 May, saw the fleet stunned by the news of the loss of HMS *Hood*, far from the warmth of the Mediterranean she knew so well. There were to be many more such reverses before final victory was achieved.

UK

'O' to 'Z' class destroyers



HMS Saumarez *is shown as she was while escorting Arctic convoys in 1943. Present at D-Day, she led Destroyer Flotilla 26 in the* Haguro *action, and was mined by Albania in the Corfu Channel in the year after the war.*



HMS Zebra *in 1945. Developed from the 'J' class, with similar machinery in a smaller hull, the war emergency classes were produced in large numbers, and to a largely standard design. HMS* Zebra *was armed with the new 114-mm (4.5-in) gun.*

War emergency programmes produced 112 fleet destroyers, but only through a great degree of standardization and reduction of minimum peacetime standards. Two so-called 'intermediate' classes, the **'O' class** and **'P' class**, came first, with eight units apiece. These were 1,540-tonners which were influenced by the thinking that produced the 'Hunt' class escort destroyers, being for the most part armed only with 102-mm (4-in) guns. As the modern twin HA mountings were not immediately available, obsolete single mountings were used. Four of the 'O' class were fitted for minelaying, and war losses were five 'P' class ships.

With the **'Q' class** came the first of a long line of standard groups, whose 1,705-ton design was heavily based on the successful 'J' class with the latter's expensive and heavy twin 119.4-mm (4.7-in) gun mountings replaced by singles. Further savings in topweight were made by reverting to quadruple torpedo tubes. The return to the 119.4-mm (4.7-in) gun may have been decided by the growing availability of the excellent 20-mm Oerlikon. Of the eight units two became war losses.

As the 'Q' class was well received, the eight **'R' class** destroyers were almost identical except for the quartering of officers and crew both forward and aft. Though the arrangement was to facilitate coming to action stations irrespective of weather conditions, it was not judged to be successful. None of the class was lost.

With the **'S' class** (also eight ships) came a modification to the forward lines to reduce spray wetness that had produced complaint as far back as the 'J' class. They were also first with 40-mm Bofors guns and a full complement of Oerlikons, in addition to the main battery having an improved elevation for AA purposes. Two of the class were war losses.

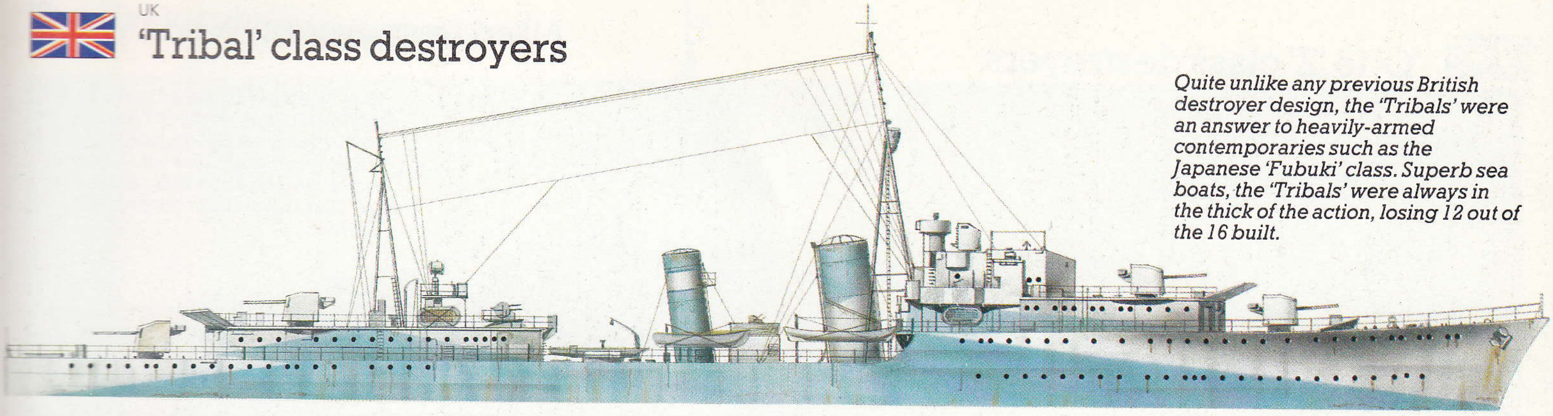
Radar and other antennae proliferated to the point where the standard tripod mast was subject to severe stress and vibration so, with the eight-strong **'T' class**, the lattice mast was introduced; one 'V' class unit was lost. **'U'**, **'V'** and **'W' classes**, each of eight ships, followed to the same design, the eight-strong **'Z' class** then arriving with the 114.3-mm (4.5-in) gun, despite much expert opinion still favouring a more AA-orientated armament. Finally, came the four eight-ship groups of **'C' class** destroyers, with 'Ca', 'Ch', 'Cr', and 'Co' names. Many war emergencies were built of poor materials and had short lives, but others went on to be rebuilt into Type 15 and 16 frigates which acted as a link with frigate-dominated fleets of today.

Specification

'Q' class (as built)
Displacement: 1,705 (leader 1,725) tons standard and 2,425 tons full load
Dimensions: 109.19 m (358.25 ft); beam 10.87 m (35.66 ft); draught 2.9 m (9.5 ft)
Propulsion: two sets of geared steam turbines delivering 29828 kW (40,000 shp) to two shafts
Performance: maximum speed 36.5 kts; endurance 8690 km (5,400 miles) at 20 kts
Armament: four single 119.4-mm (4.7-in), one quadruple 2-pdr 'pompom' and three twin 20-mm AA guns, and two quadruple 533-mm (21-in) torpedo tube mountings
Complement: 175

HMS Raider *is shown as part of the group of an escort carrier in East Indian waters in early 1945. Among the most stable of destroyers, the 'Q' and 'R' classes were the first to have a transom stern.* Raider *became INS* Rajput *in the Indian Navy, to which she transferred in 1949.*

'Tribal' class destroyers



Quite unlike any previous British destroyer design, the 'Tribals' were an answer to heavily-armed contemporaries such as the Japanese 'Fubuki' class. Superb sea boats, the 'Tribals' were always in the thick of the action, losing 12 out of the 16 built.

Among the finest destroyers ever built for the Royal Navy, the 16 **'Tribal' class** ships appear, nevertheless, to have been produced as an answer to those being built by potential enemies rather than to fill any clearly identifiable role in the fleet. The long series of flotillas then culminating in the 'T' class had been armed with four single 119.4-mm (4.7-in) guns and, in order to uprate these to twin mountings, the 'Tribals' needed a 36 per cent increase in standard tonnage yet, despite having only one set of torpedo tubes, were also one-sixth longer. They were seen as gun-armed 'super-destroyers', and there was much disagreement over their correct classification. Indeed, one casting of the original design had provided for a fifth gunhouse on the forward side of the larger after deckhouse but this, fortunately, was abandoned in favour of a quadruple 'pompom'. Even so, five of their number were sunk by aircraft attack.

By any standards they were magnificent-looking ships, their nicely-balanced profile in harmony with the high-freeboard hull that was introduced to improve their fighting qualities in poor weather. Wartime modifications included the exchange of 'X' mounting for a more useful twin 102-mm (4-in) HA mounting, and the suppression of the mainmast to improve firing arcs. The class was launched in 1937, but only four of the 16 were still afloat at the end of 1942, and these all eventually received lattice masts that did nothing for their appearance.

'Tribals' were built also for the Royal Australian Navy (three ships) and Royal Canadian Navy (eight ships), and all saw a great deal of action. Notable exploits include the '*Altmark* incident', where HMS ***Cossack*** rescued a large number of British merchant seamen from inside Norwegian territorial waters just before the German invasion, and the harrying of the *Bismarck* by four 'Tribals' and a Polish destroyer for the whole night before her sinking. Of those lost, HMS ***Sikh*** and HMS *Zulu* were sunk when a commando raid near Tobruk went badly wrong, and HMS ***Punjabi***, sunk in collision with the battleship HMS *King George V*, seriously damaged the latter in turn when her full outfit of depth charges exploded. The other units were HMS ***Afridi***, HMS ***Ashanti***, HMS ***Bedouin***, HMS ***Eskimo***, HMS ***Gurkha***, HMS ***Mashona***, HMS ***Maori***, HMS ***Matabele***, HMS ***Mohawk***, HMS ***Nubian***, HMS ***Somali*** and HMS ***Tartar***.

Specification

'Tribal' class (as built)

Displacement: 1,870 tons standard and 1,975 tons full load

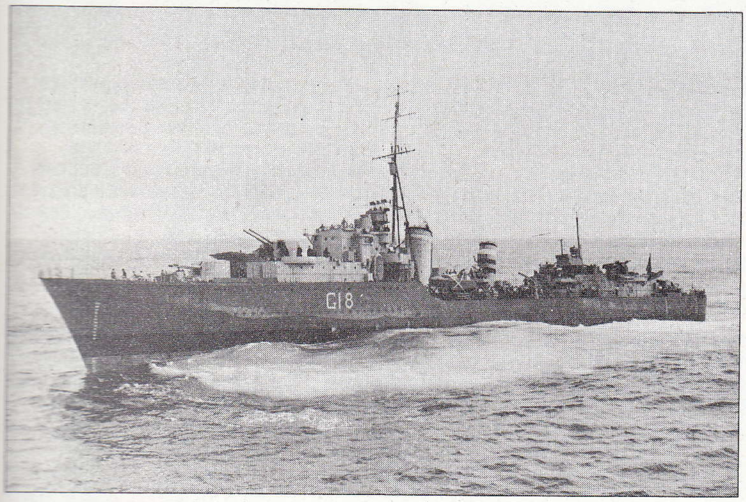
Dimensions: length 115.1 m (377.5 ft); beam 11.13 m (36.5 ft); draught 2.74 m (9 ft)

Propulsion: two sets of geared steam turbines delivering 32811 kW (44,000 shp) to two shafts

Performance: maximum speed 36 kts; endurance 10541 km (6,550 miles) at 15 kts

Armament: four twin 119.4-mm (4.7-in) and one quadruple 2-pdr 'pompom' guns, and one quadruple 533-mm (21-in) torpedo tube mounting

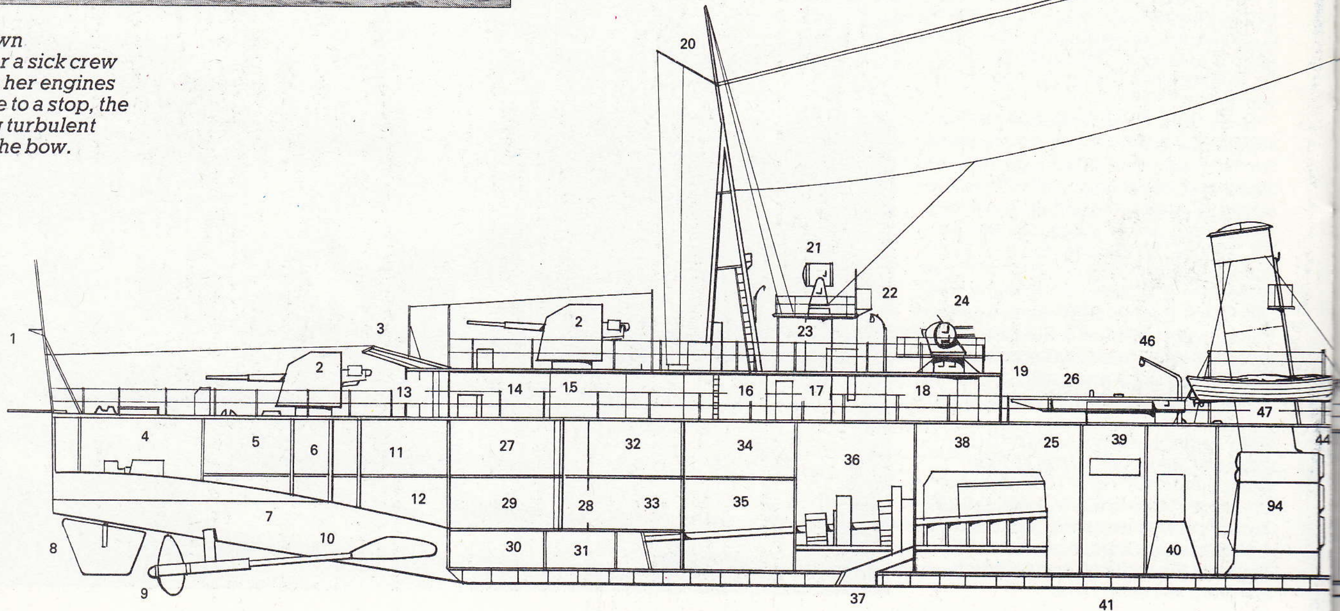
Complement: 190



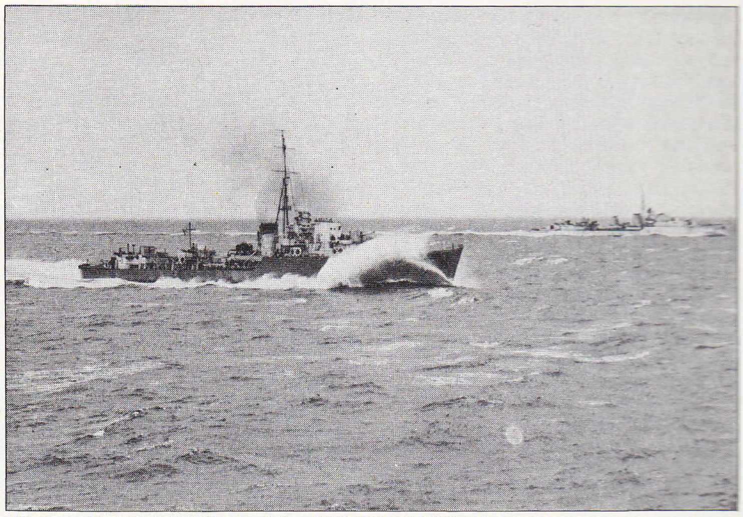
Above: HMS Zulu *is shown manoeuvring to transfer a sick crew member at sea. She has her engines full astern and has come to a stop, the racing screws thrusting turbulent water forward toward the bow.*

'Tribal' class (1940) cutaway drawing key

1 Aft navigation light
2 Twin 119-mm (4.7-in) guns
3 Blast screen
4 Steering compartment
5 Provision room
6 Ammunition hoist
7 Waterline
8 Balanced rudder
9 Twin screws
10 Shaft
11 Wardroom
12 Store
13 CO's bathroom
14 CO's sleeping cabin
15 CO's day cabin
16 CO's pantry
17 Sick bay
18 Engineer's workshop
19 Aft superstructure deck
20 Mainmast
21 40-in searchlight
22 Searchlight platform
23 Ventilator
24 2-pdr Mk 4 Pom Pom
25 Upper deck
26 21-in quadruple torpedo tubes
27 Officers' cabins
28 Upper ammunition handling area
29 Gunner's office
30 Shell room
31 119-mm (4.7-in) magazine
32 Ship's office
33 Torpedo store
34 Engineer officer's cabin
35 Oil fuel tanks
36 Gearing room
37 Main circulating inlet
38 Engine room
39 Torpedo tube turntable machinery space
40 Reserve feed tanks
41 Double bottom
42 No. 1 boiler room
43 No. 2 boiler room
44 No. 3 boiler room
45 Funnel casing
46 Torpedo handling crane
47 7.62-m (25-ft) motor launch
48 8.22-m (27-ft) whaler
49 Boiler room vent
50 Wireless aerials
51 Foremast
52 Spotting top/lookout
53 Combined RF and AA control
54 Director control
55 Bridge
56 Compass platform
57 Signal platform
58 20-in searchlight
59 Pom-Pom director
60 CO's sea cabin
61 Asdic room
62 Wheelhouse
63 Remote control station
64 Chart house
65 Drying room
66 Galley
67 PO's scullery
68 Engineer's office
69 Crew mess



Destroyer Developments of World War 11



At sea, the war emergency general-purpose destroyer HMS Onslow *contrasts strongly with the large pre-war fleet destroyer HMS* Ashanti. *War experience showed that these were far too heavily armed for most destroyer purposes, except in the vital area of anti-aircraft weaponry.*

Where virtually all Allied destroyers at the beginning of the war were cast in the traditional gun/torpedo mould the various theatres soon forced evolutionary changes.

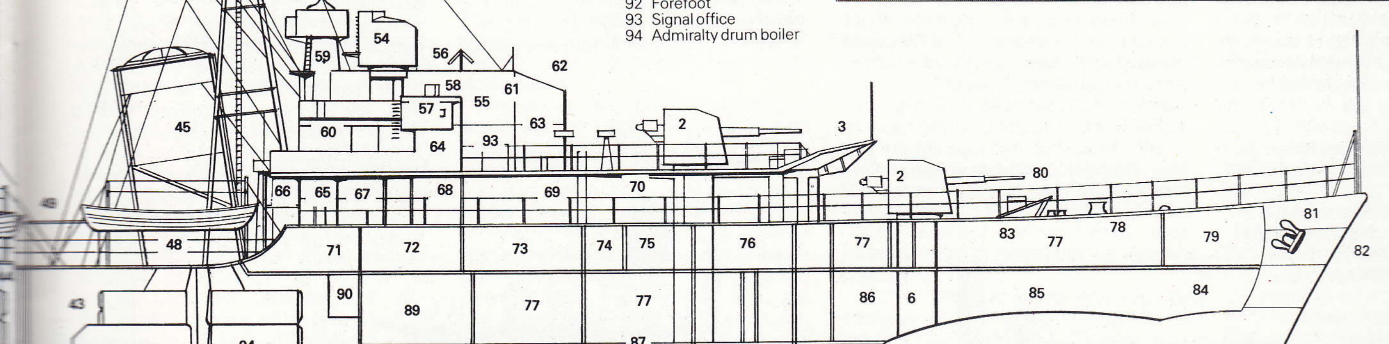
In the North Atlantic, the British used older destroyers extensively on convoy escort duty. For this their gun and torpedo armament was far too comprehensive and was reduced in favour of better means of stowing and delivering depth charges on a scale unconsidered in peacetime. Most had been fitted with asdic (later called sonar), but the performance of this system had been overestimated. Its limitations were a narrow beam and an inability to cope with the initial German submarine tactic of night attacks on the surface. The first was gradually overcome by the development of ahead-throwing weapons such as the Hedgehog and later the Squid, and the latter by the introduction of radar.

Designed for optimum performance over comparatively short periods at high speeds, these destroyers were overpowered for convoy duty and suffered from poor endurance. Some exchanged boiler capacity for extra bunkerage. All were lively and wet, failings which over several days fatigued a crew and reduced its efficiency. Their shortcomings on this essential duty were such as to promote the rapid development of specialist frigates, ships both cheap and capacious, fast enough yet long-legged, designed around a weapon and sensor fit that had largely to be drafted onto a destroyer.

In the Mediterranean, the British experience roughly paralleled that of the Americans in the Pacific. In these theatres the destroyer more often worked in conjunction with fleet concentrations of various sizes against other surface elements in the context of an ever-present threat from aircraft. For this, the standard armament was largely satisfactory and the pressure for change correspondingly less. All, but particularly the British, found themselves inadequately armed to meet air attack. At best they had a quadruple 2-pdr 'pompom', often machine-guns only. Initially, the main battery 119.4-mm (4.7-in) gun had elevations of only 30°, but even when later increased to 55° they could scarcely be regarded as dual-purpose weapons. Only with the 'Battle' and 'Weapon' classes did the Royal Navy get destroyers with true dual-purpose main armament and stabilized, radar-laid AA weapons capable of tackling the problem. By virtue of their production capacity, the Americans were able to supply and fit comprehensive batteries of 40-mm and 20-mm weapons long before the British. The clear arcs of fire required for these resulted in the suppression of all high fixtures abaft the funnels.

With the advent of the *kamikaze* came the need not only to shoot the aircraft down but also to disintegrate it, stimulating design of an automatic 76.2-mm (3-in) gun. This weapon was developed successfully, but too late to be of use in the war, destroyers receiving it in later updates. Another offshoot of the *kamikaze* menace was the need to detect approaching air strikes. Air surveillance radars were rapidly improved, altering the profile of the destroyers by the mounting of their heavy antennae on a lattice mast amidships. For maximum advance warning, these destroyers would be thrown forward as pickets and, themselves, became targets of an enemy intent on 'rolling back' the defence perimeter. The weight of a growing amount of gadgetry aloft became a major problem in some classes, which collected a considerable amount of ballast in the hull to counteract it, doing nothing for performance.

Right: HMS Bedouin *leaves a lonely Iceland fjord in 1942, ready to make the long haul north to Murmansk on the Soviet convoy route. Being such capable ships, the 'Tribals' were used hard, and suffered accordingly.*



70	Signal deck
71	Torpedo store
72	Toilets
73	CPO's washroom
74	Potato store
75	Canteen
76	Transmitting station
77	Crew space
78	Forecastle deck
79	Paint room
80	Capstan
81	Anchor
82	Bow
83	Breakwater
84	Cable room
85	Dry stores/provisions
86	Asdic office
87	Lower deck
88	Hold
89	Generating room
90	Diesel tank
91	Keel
92	Forefoot
93	Signal office
94	Admiralty drum boiler

UK

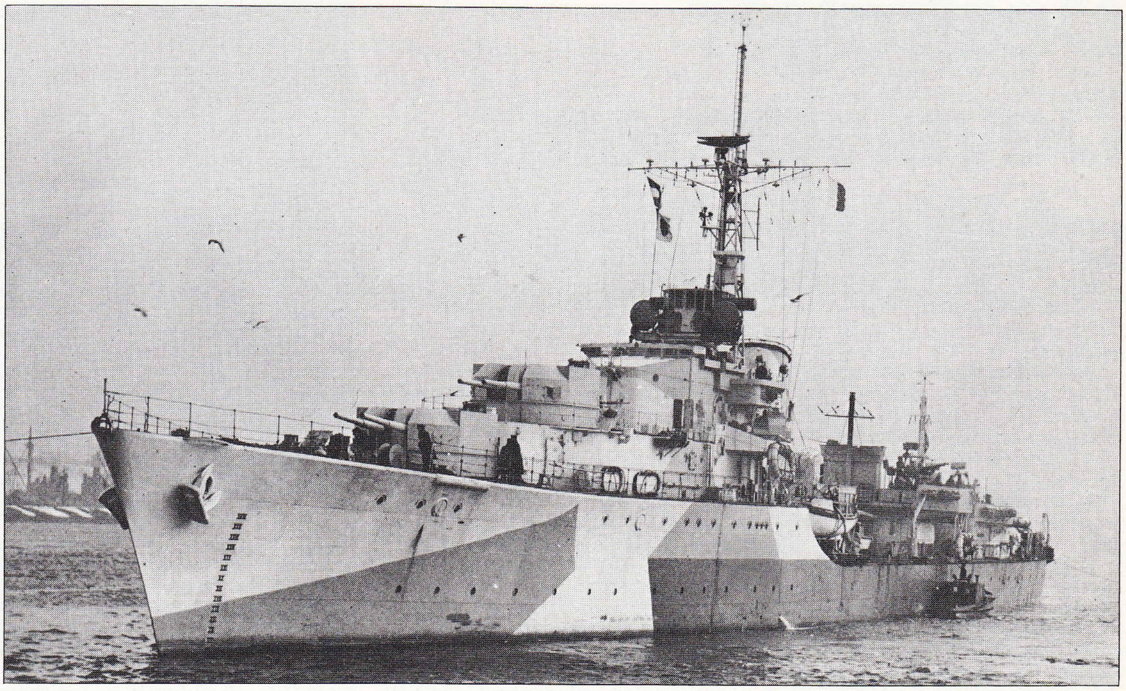
'Battle' class destroyer

As they served until the comparatively recent past, the **'Battle' class** destroyers may not be thought of as warbuilt but, in fact, they had their genesis about the time of Matapan when the Royal Navy was still desperately seeking ways of combatting the aerial threat so totally underestimated in the 1930s. Hard experience showed that the dive-bomber needed to be countered by plenty of metal yet, while the 'pompom' was an excellent weapon, main battery guns were capable of only 40° or 55° maximum elevation. The specification for the new destroyer called for 85° and a high rate of fire, the ship herself to be stabilized for higher accuracies and designed for rapid rudder response. By the time that the specification had been finalized there was also a Pacific war to be taken into account, together with the hard fact that the ships might not be completed in time to be of any use.

The overall result was a very large ship with considerable endurance and twinned gun houses, controversially both sited forward. A single 102-mm (4-in) gun was added abaft the stack but was really good for little more than firing illuminants. The large after structure supported two twin 40-mm mountings which had their own directors and were fully stabilized, so active fins were not, in the event, incorporated into the hull. A prominent feature was the Mk 6 'greenhouse' director control for the main armament, with the twin nacelles of the American-built Type 275 radar. Right aft, the initial large outfits of depth charges were soon superseded by the ahead-firing Squid mortar.

Sixteen of these ships, the **'1942' type**, were ordered, followed by three eight-ship flotillas of a modified **'1943' type**. In these latter the undersized main battery was increased by the substitution of an extra 114.3-mm (4.5-in) for the amidships 102-mm (4-in) gun, the torpedo tubes were increased from eight to 10 (no doubt as a result of lessons from Japanese expertise) and the gunnery radar was revamped into a new-style Mk 37 tower.

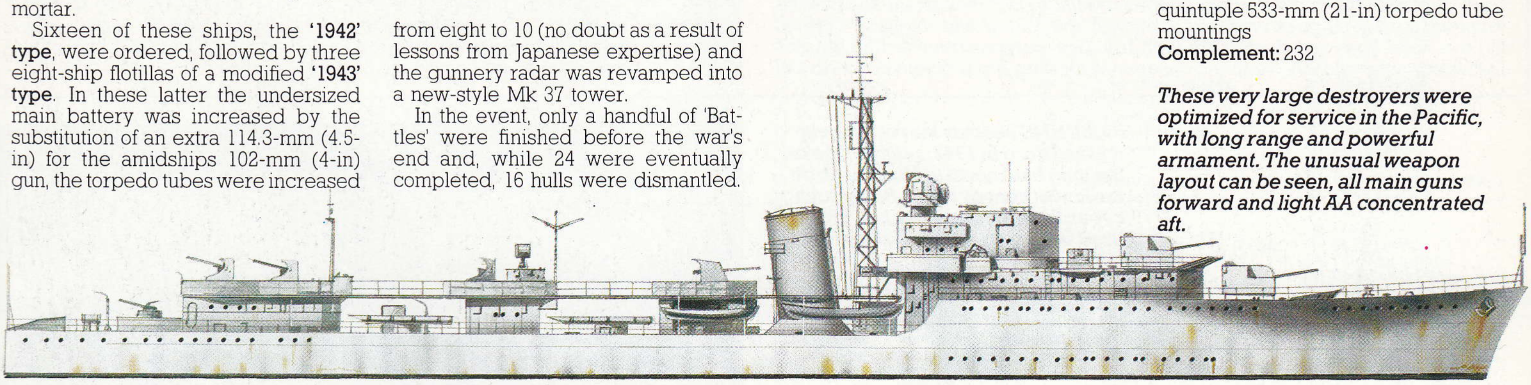
In the event, only a handful of 'Battles' were finished before the war's end and, while 24 were eventually completed, 16 hulls were dismantled.



Designed with the early lessons of the war very much in mind, the 'Battle' class destroyers were the first British destroyers to have a main armament of 85° elevation, together with radar direction. This gave a really effective anti-aircraft armament, when added to the six 40-mm weapons also mounted.

Specification

'Battle' (1943 type) class (as built)
Displacement: 2,380 tons standard and 3,290 tons full load
Dimensions: length 115.52 m (379 ft); beam 12.26 m (40.22 ft); draught 3.28 m (10.75 in)
Propulsion: two sets of geared steam turbines delivering 37285 kW (50,000 shp) to two shafts
Performance: maximum speed 35.5 kts; endurance 8047 km (5,000 miles) at 20 kts
Armament: two twin and one single 114.3-mm (4.5-in) DP plus two twin and two single 40-mm AA guns, and two quintuple 533-mm (21-in) torpedo tube mountings
Complement: 232



These very large destroyers were optimized for service in the Pacific, with long range and powerful armament. The unusual weapon layout can be seen, all main guns forward and light AA concentrated aft.

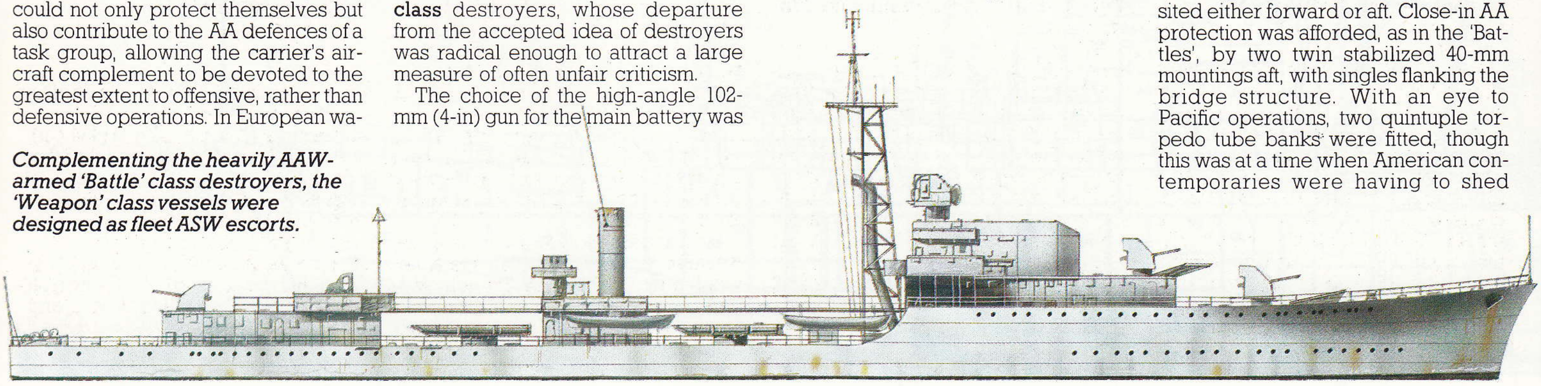
UK

'Weapon' class destroyer

Hard wartime experience had exposed the limitations of fleet destroyers as anti-submarine platforms. Nevertheless, the fleet still required a fast anti-submarine screen of ships that could not only protect themselves but also contribute to the AA defences of a task group, allowing the carrier's aircraft complement to be devoted to the greatest extent to offensive, rather than defensive operations. In European waters a full outfit of torpedo tubes had become superfluous, but this was not yet true of the Far Eastern theatre. It was these changed priorities which dominated the design of the **'Weapon' class** destroyers, whose departure from the accepted idea of destroyers was radical enough to attract a large measure of often unfair criticism.

The choice of the high-angle 102-mm (4-in) gun for the main battery was logical, its 14-kg (31-lb) projectile enabling fast hand-working even up to the maximum elevation of 80°. Only two twin mountings could be shipped, however, as the hull length was limited by available building berths. A third planned mounting was, therefore, abandoned in favour of the newly-introduced three-barrel Squid anti-submarine mortars, which could be sited either forward or aft. Close-in AA protection was afforded, as in the 'Battles', by two twin stabilized 40-mm mountings aft, with singles flanking the bridge structure. With an eye to Pacific operations, two quintuple torpedo tube banks were fitted, though this was at a time when American contemporaries were having to shed

Complementing the heavily AAW-armed 'Battle' class destroyers, the 'Weapon' class vessels were designed as fleet ASW escorts.



tubes in favour of enhanced AA armament. In a torpedo attack against surface targets, unsupported 'Weapons' would have suffered badly with their small-calibre main battery, and to redress this deficiency, a follow-on **'G' class** of eight ships was planned, largely similar but with twin 114.3-mm (4.5-in) dual-purpose mountings. Like all but four of the 20 'Weapons', however, the end of hostilities saw them cancelled. The four completed ships were HMS ***Battleaxe***, HMS ***Broadsword***, HMS ***Crossbow*** and HMS ***Scorpion***.

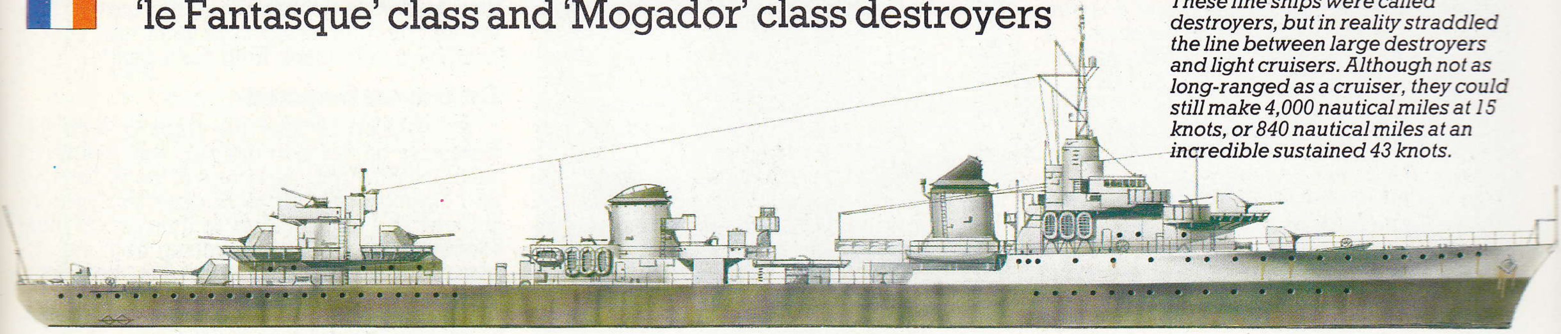
To improve damage control, the boiler and machinery spaces were sited alternately, requiring two funnels. It was the supporting of the forward funnel within the lattice foremast (copied also in the following 'Darings;) that appeared to particularly offend critics.

Specification

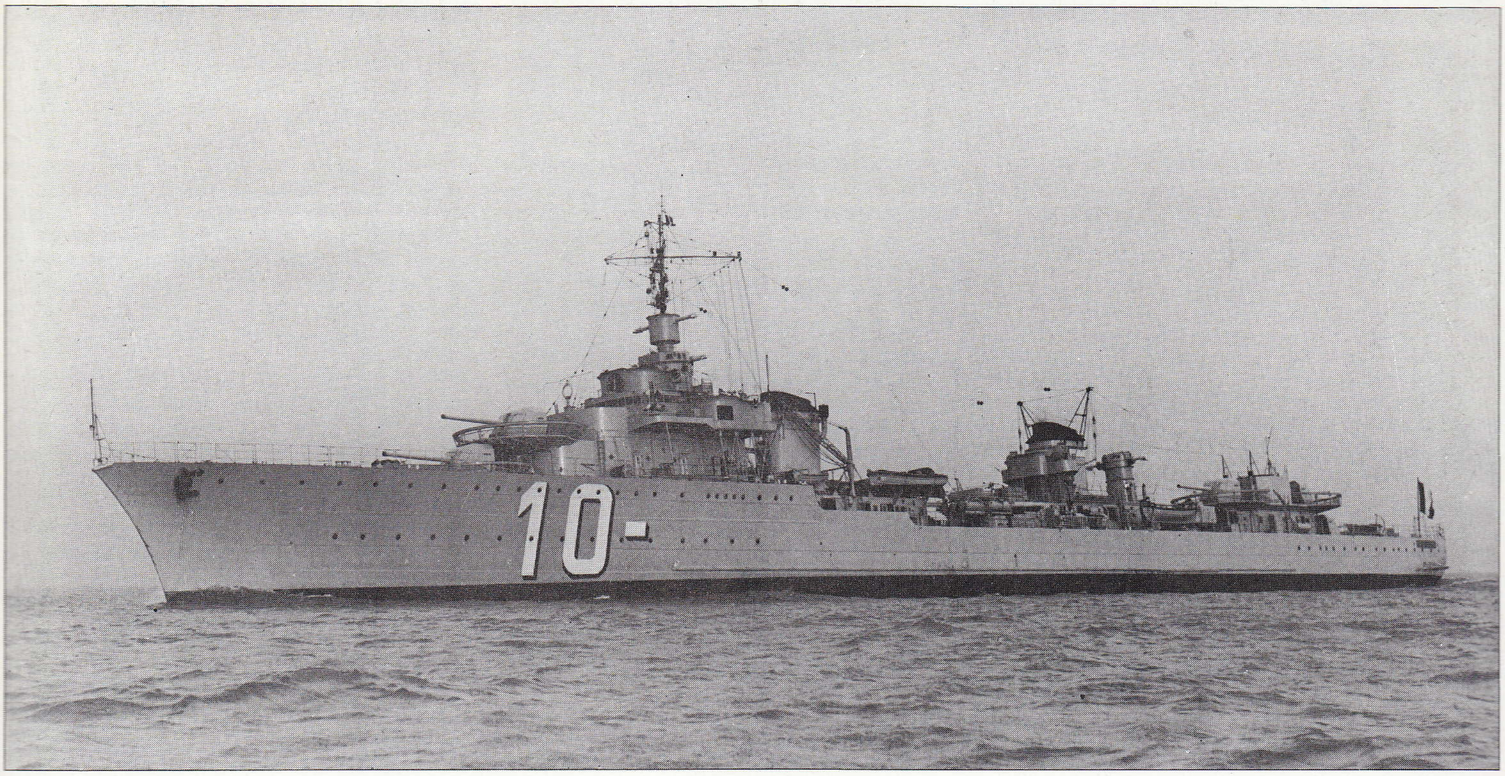
'Weapon' class (as built)
Displacement: 1,980 tons standard and 2,825 tons full load
Dimensions: length 111.2 m (365 ft); beam 11.58 m (38 ft); draught 3.2 m (10.5 ft)
Propulsion: two sets of geared steam turbines delivering 29828 kW (40,000 shp) to two shafts
Performance: maximum speed 35 kts
Armament: two twin 102-mm (4-in) DP plus two twin and two single 40-mm AA guns, and two quintuple 533-mm (21-in) torpedo tube mountings
Complement: 255

FRANCE

'le Fantasque' class and 'Mogador' class destroyers



These fine ships were called destroyers, but in reality straddled the line between large destroyers and light cruisers. Although not as long-ranged as a cruiser, they could still make 4,000 nautical miles at 15 knots, or 840 nautical miles at an incredible sustained 43 knots.



Le Fantasque *as she appeared after her 1939 refit. This fine-looking vessel typified the kind of 'super destroyer' arising out of Franco-Italian naval rivalry in the Mediterranean.*

The **'le Fantasque' class** was the penultimate class of a series that set new destroyer standards at the 'top end', yet which had little real influence on construction abroad as they stemmed largely from naval rivalry with the Italians.

It was with the three 'Leone' class ships of 1921-2 that the Italians first stimulated the French, who replied with the six **'Chacal' class** destroyers, significantly with similar names. The already impressive 37285 kW (50,000 shp) of these ships was increased to 47725 kW (64,000 shp) in the six **'Guépard' class** ships of 1927, the larger number of boilers producing also a superbly imposing four-funnel profile. The Italians answered with the 12 1,950-ton 'Navigatori' but, by the completion of these in 1931, the French had embarked on the 12-ship **'Aigle'class** and **'Vauquelin' class** group. It was from these that the 'le Fantasques' were derived: ***l'Audacieux, le Fantasque, le Malin, le Terrible, le Triomphant*** and ***l'Indomptable***.

These six destroyers were magnificent-looking ships with an imposing freeboard and an extra 3 m (9.84 ft) in overall length that allowed for a fifth gun and three triple sets of torpedo tubes. The four boilers were split into two pairs, separated by a machinery space and with a squat funnel exhausting each pair. Officially their installed power was 55182 kW (74,000 shp), but this would appear to have been exceeded by at least 10 per cent, for all could produce 43 kts on occasion and, more importantly, could maintain 37 kts in a seaway.

Only the two **'Mogador' class** destroyers pushed the specification further, their 137.4-m (451-ft) hulls carrying eight 138.6-mm (5.5-in) guns and 10 tubes. Although still very much super-destroyers in concept and appearance, they resulted directly in the Italian 'Capitani Romani' which, while having very similar major parameters, were more scout cruisers in approach.

Both latter groups of French destroyers were, in fact, later to be termed 'light cruisers' but their original label of *contretorpilleur* better defined their primary task in breaking up enemy destroyer attacks.

Half-a-dozen of them survived the wastage of war and, well modified, went on to serve the French fleet through to the 1950s.

Specification

'le Fantasque' class (as built)
Displacement: 2,570 tons standard and 3,350 tons full load
Dimensions: length 132.4 m (434.4 ft); beam 12.35 m (40.52 ft) draught 5.0 m (16.4 ft)
Propulsion: two sets of geared steam turbines delivering 55182 kW (74,000 shp) to two shafts
Performance: designed speed 37 kts
Armament: five single 138.6-mm (5.46-in) and two twin 37-mm AA guns, and three triple 550-mm (21.65-in) torpedo tube mountings
Complement: 210

Sink the *Haguro!*

On the face of it, one of the most powerful heavy cruisers ever built versus five small destroyers would be no contest – but in May 1945 reality proved very different.

At 16.40 local time on 10 May 1945, the British submarine HMS *Subtle* sighted a 'Nachi-class cruiser' with a destroyer and two smaller escorts in the narrows of the Malacca Strait, between Malaya and the island of Sumatra. They were proceeding north westward at about 17 kts but, though the *Subtle* and two sisters were in theory blocking the strait, a combination of shallow waters, fast tidal flow and zigzagging of the target conspired to defeat the submarines' efforts to close, and a sighting report was transmitted.

The *Subtle*'s report had been accurate, for the cruiser was the *Haguro* which, accompanied by the destroyer *Kamikaze* and two patrol ships, had left Singapore the day before, bound for Port Blair in the Andamans. Her mission was to evacuate the garrison. In the Pacific islands, this would probably have been undertaken by the 'Tokyo Express' or a Daihatsu barge service, but the Andamans lay a hard days' steaming over open sea.

On the strength of an earlier intelligence report a powerful Allied force had already left Colombo to intercept the *Haguro*. Under the command of Vice Admiral H.T.C. Walker, it included the battleships HMS *Queen Elizabeth* and the French *Richelieu*, the Dutch destroyer *Tromp* and four escort carriers. On the day following the *Subtle*'s report, however, this force was sighted by a Japanese reconnaissance aircraft and the alerted *Haguro* turned back, passing the British submarine line, the persistent *Subtle* getting a good depth charging from the *Kamikaze* for her trouble.

The *Haguro* then dawdled, awaiting the outcome of a planned airstrike on the British force. This did not materialize but, despite the British presence west of Sumatra, an escorted Japanese transport succeeded in running from Penang to the Nicobars only 320 km (200 miles) to the south of Port Blair. Encouraged, the *Haguro* set off again on 14 May and, with all but one of the submarines now withdrawn, entered the Andaman Sea unchallenged. Though suspecting the movement, Walker had no definite information and, in the early hours of 15 May, detached the 26th Destroyer Flotilla, under Captain Manley Power, to work along the *Haguro*'s estimated track pending an air search.

Power's ship was HMS *Saumarez*, and she was accompanied by four of her 'V' class sisters, HMS *Venus*, *Verulam*, *Virago* and *Volage*. Let off the leash, they were in sight of the northern tip of Sumatra by daybreak. An air search at this time by four Grumman Avengers found, not the *Haguro*, but the transport returning from the Nicobars. They attacked it unsuccessfully, following which two had to 'ditch'.

Still without a fix on his primary target, Power pressed on in the direction of the transport's reported position. At 10.41, however, came a signal from the commander-in-chief Ceylon to Walker, repeated to Power, to abandon the operation as the *Haguro* was no longer considered a threat to wider activities in the Bay of Bengal. A true destroyer man, Power decided that Ceylon could not be in full receipt of the facts and queried the signal. This was a time-consuming process involving the messages being relayed and, pending clarification, the 26th Destroyer Flotilla held its course.

This Nelsonian approach was vindicated when a further Avenger, in fixing the transport, sighted also the *Haguro* and her destroyer running north out of the strait at easy speed. Again she reversed course on being sighted but Power held on. The time was approaching noon and a dive-bombing attack by Avengers at near maximum range again had no effect. It was up to the destroyers.

In the early afternoon they doubled the northerly tip of Sumatra and entered the strait at 27 kts. The weather was hot and sunny with vast banks of tropical cumulus building ominously over the land. Throughout the afternoon reconnaissance reports told of the *Haguro*'s leisurely progress southwards, alert apparently only to air attack. Power needed to make contact before dark yet dared not attack his powerful opponent by day.

At 16.40 the five destroyers were reorganized onto a line of bearing with the *Saumarez* at the centre. This meant that, although in visual contact, they could search a broad swathe of the strait. The afternoon turned to short tropical dusk, the cloud moving off the land and the oncoming humid darkness becoming shot with flickers of lightning.

The face of the waters was increasingly lashed by heavy showers, ideal destroyer weather, particularly with the superior British gunnery radars.

At a relaxed state of readiness, the destroyers were steering roughly ESE with the *Venus* the most northerly ship, the remainder strung out on a line of bearing on her starboard bow. The thundery weather made for freak radar conditions and, at 22.40, the *Venus* detected a target at nearly 64-km (40-mile) range; it bore north east and a plot determined its course to be south east. It was the *Haguro* which, having abandoned the attempt to get to Port Blair, was making for Singapore.

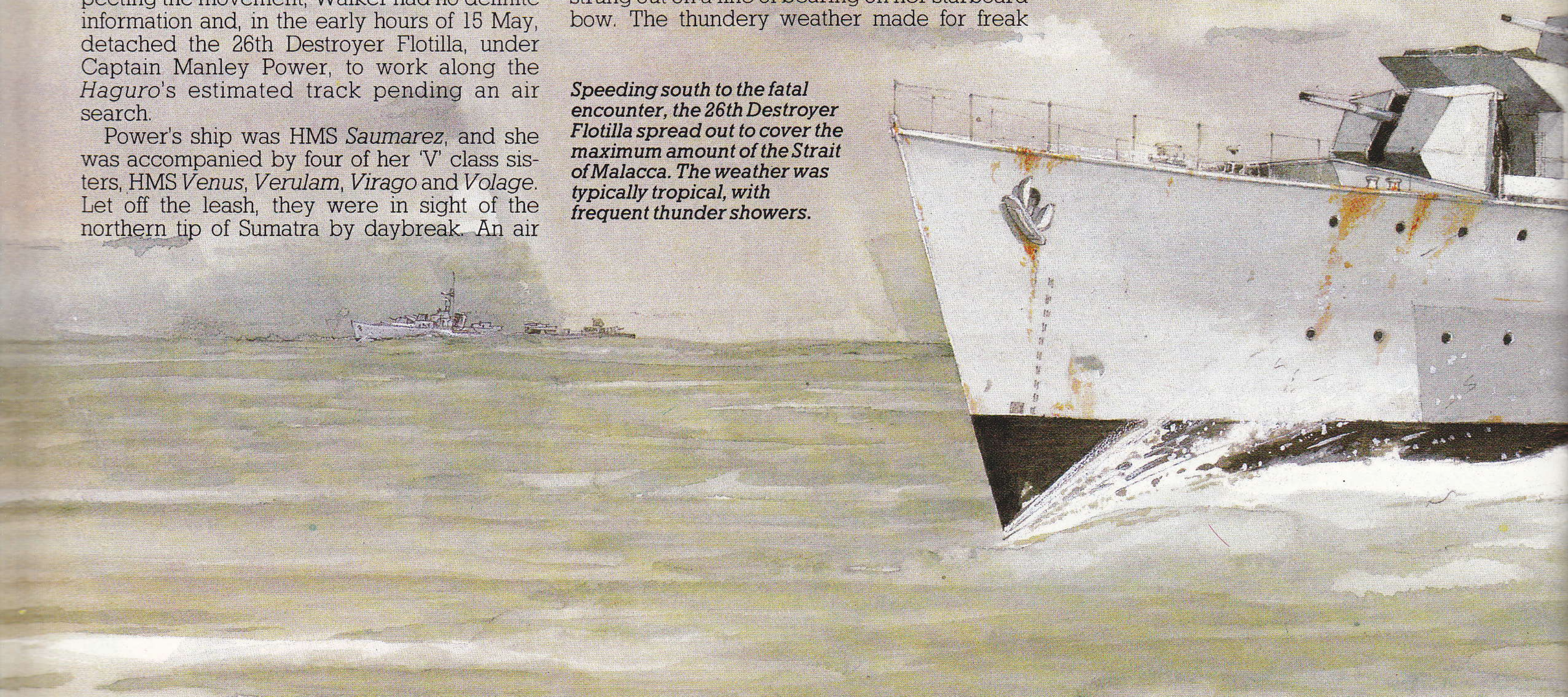
Power's tactics had been rehearsed on many earlier occasions and each commander knew what was expected of him.

The flotilla overtook its target, no more than 22.5 km (14 miles) wide to starboard of its track, then hooked to the northward in a curved line abeam, the aim being to pinpoint the target, envelop it and attack from each quarter.

Destroyers detected

At 00.45 on 16 May the *Haguro*, with the *Kamikaze* on her port quarter, was 16 km (10 miles) distant from the centre of the British line and closing when her radar detected the destroyers. She manoeuvred as if unsure of their identity (they were approaching from the unlikely direction of Singapore) but then, with sudden resolve, reversed course. At this stage only the *Venus* had worked behind the target and now found herself on its port bow. While Power's other destroyers bent on speed to overtake, the *Venus* crossed the *Haguro*'s bows to attack from a forward bearing to starboard, missed her chance and had to make a rapid 300° turn to port to disengage. The Japanese, however, apparently assumed that torpedoes had been launched and again reversed course but still without opening fire. Power's four destroyers were now closing through the velvet darkness at a relative speed of over 50 kts. Any misunderstandings were resolved as the *Saumarez* passed the *Kamikaze* on a reciprocal course and raked her at close range with both main armament and automatic fire.

It was just after 01.30 and both sides fired starshell. The *Saumarez* was bathed by the greenish glare at only 2745 m (3,000 yards) from the *Haguro*, which opened a brisk fire. The destroyer was soon hit in a boiler room but skidded round in a tight turn to port and launched a full outfit of torpedoes. Almost simultaneously the *Verulam* was attacking from the adjacent quadrant, unopposed as a result of the Japanese preoccupation with the *Saumarez*.



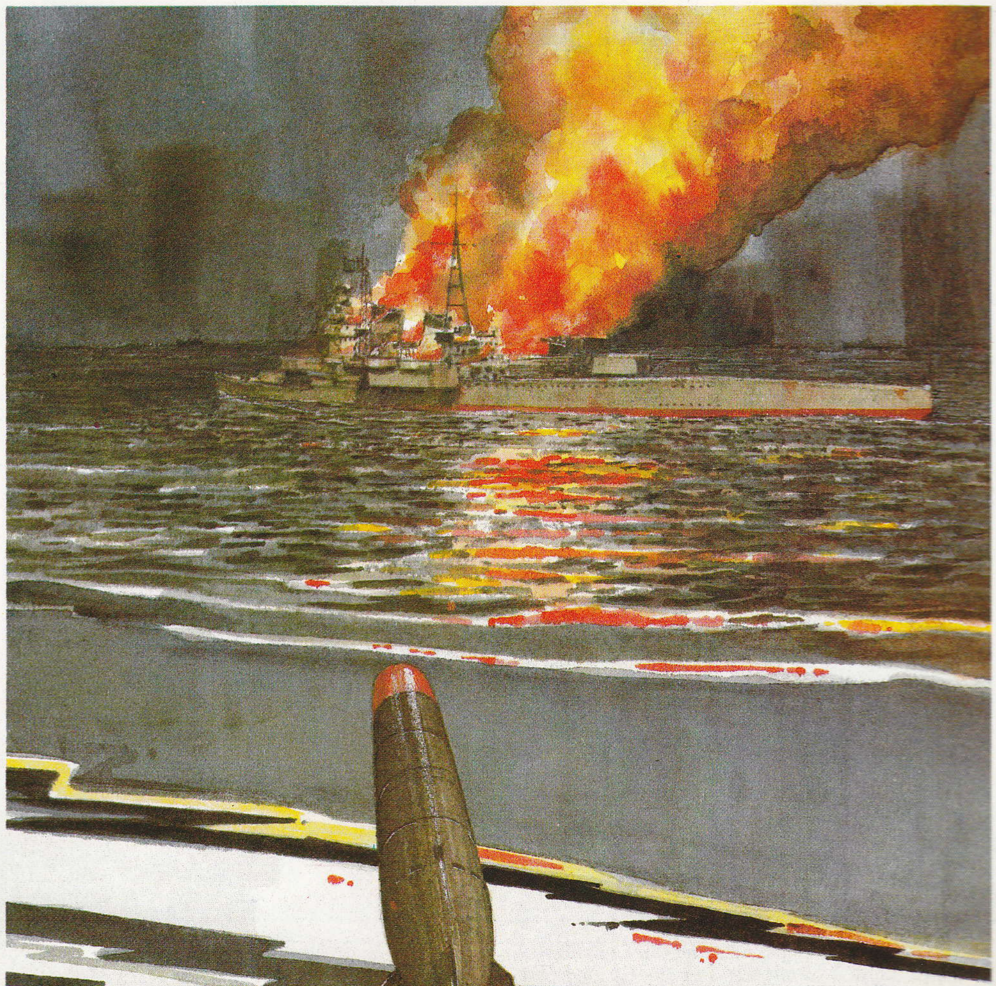
Speeding south to the fatal encounter, the 26th Destroyer Flotilla spread out to cover the maximum amount of the Strait of Malacca. The weather was typically tropical, with frequent thunder showers.

The now violently manoeuvring cruiser was hit forward by three torpedoes. Her forward armament went silent and she began to list, only to be hit by one, possibly two, further torpedoes in the machinery spaces.

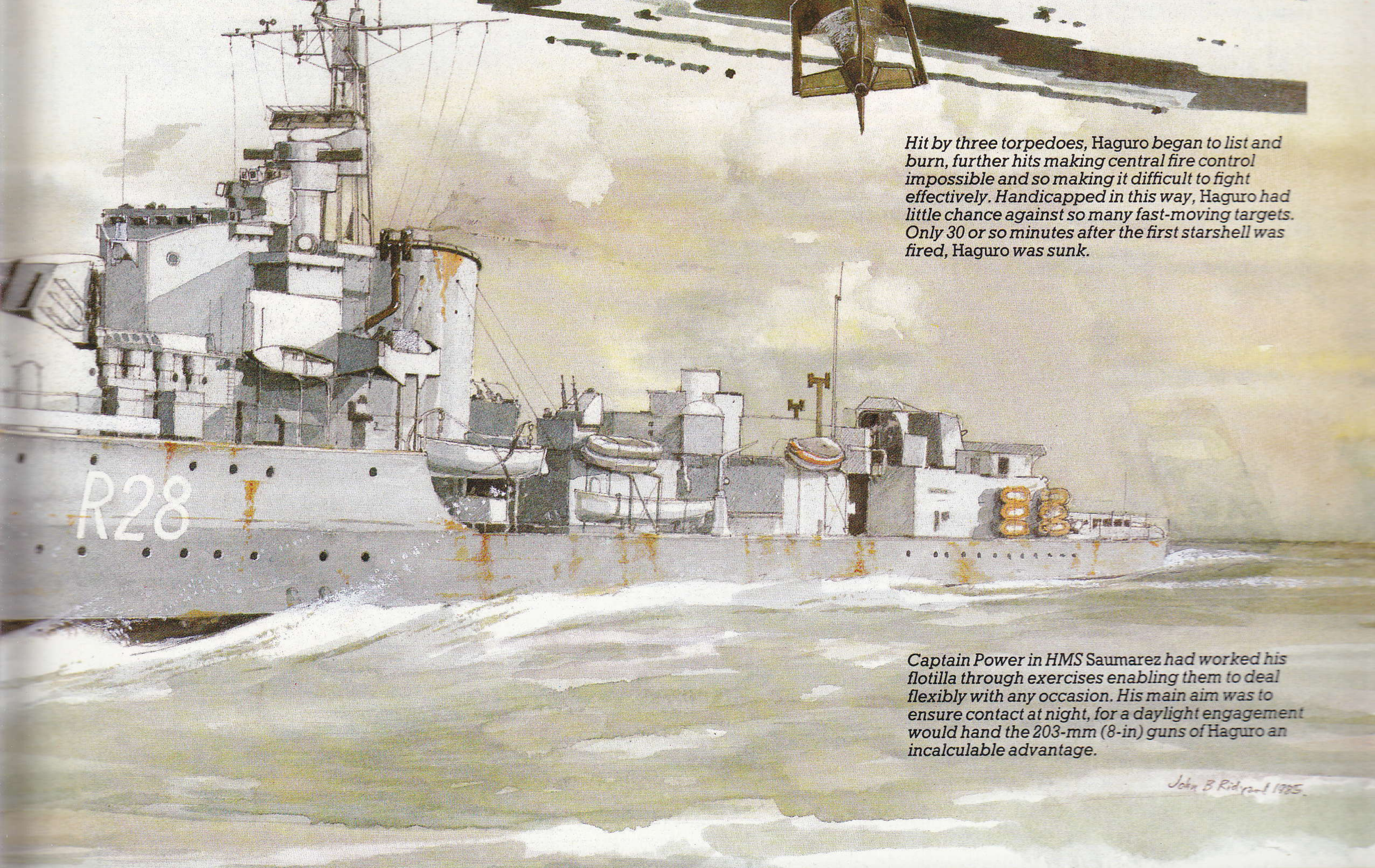
For 10 minutes the *Haguro* was teased by destroyer gunfire from various directions until, seizing their chance, the *Venus* and *Virago* ran in from both starboard quadrants, launching 11 torpedoes between them. There were three likely hits but the return fire was now only sporadic and under local control. On the *Haguro*'s bridge most of her senior officers lay slaughtered by a direct hit from a 119.4-mm (4.7-in) shell.

Only the *Volage* had now not attacked, and was directed at 01.50 to finish off the hulk of the cruiser now lying deep, listing and burning aft. At a range of only 1.6 km (1 mile), every torpedo missed and it fell to the *Venus* with just two remaining to sink her. At 02.06 the *Haguro* went down, some 72 km (45 miles) south west of Penang.

The jubilant destroyers retired almost immediately, but the *Kamikaze* later returned to retrieve 400 survivors from the dark waters. Of the British flotilla only *Saumarez* had been damaged, suffering two dead. In the words of Admiral Lord Mountbatten, the supreme commander in South East Asia, it had been 'an outstanding example of a night attack by destroyers'.



Hit by three torpedoes, Haguro *began to list and burn, further hits making central fire control impossible and so making it difficult to fight effectively. Handicapped in this way,* Haguro *had little chance against so many fast-moving targets. Only 30 or so minutes after the first starshell was fired,* Haguro *was sunk.*



Captain Power in HMS Saumarez *had worked his flotilla through exercises enabling them to deal flexibly with any occasion. His main aim was to ensure contact at night, for a daylight engagement would hand the 203-mm (8-in) guns of* Haguro *an incalculable advantage.*

FRANCE

'Bourrasque' class, 'l'Adroit' class and 'le Hardi' class destroyers

Corresponding to British fleet destroyers, the French *torpilleurs d'escadre* ranked between the light 'Mediterranean' boats and the super destroyers. By 1940 there were 34 in commission, of three separate classes. Of these the 1,320-ton **'Bourrasque' class** dated from the 1922 programme. Named after winds, these 12 ships had an unusual funnel arrangement, one for each of three boilers, unequally spaced and of unequal height as they had to be cut down as a stability measure soon after completion. Even so, with four 130-mm (5.1-in) guns and only six torpedo tubes, they were still quite modestly armed in comparison with, for example, a later American 'Gridley', which had 16 tubes on a hull of very similar dimensions. The ships were the ***Bourrasque, Cyclone, Mistral, Orage, Ouragan, Simoun, Sirocco, Tempête, Tornade, Tramontane, Trombe*** and ***Typhon***.

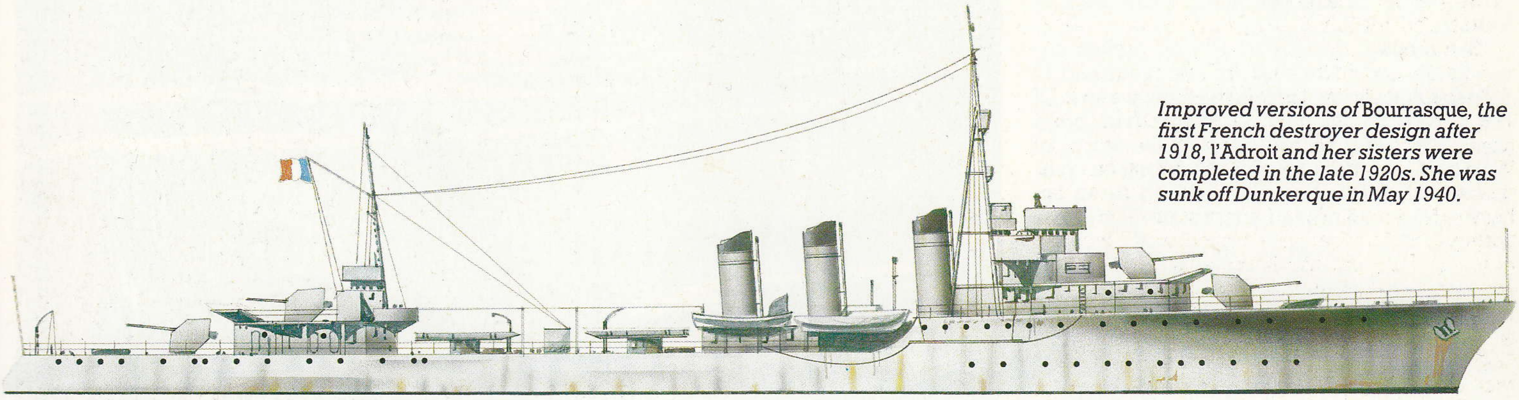
Even before the completion of the 'Bourrasques' in 1928, the first of 14 1,389-ton **'l'Adroit' class** destroyers were being constructed to an improved design. Marginally larger in both dimensions and displacement, slightly higher powered and faster, they retained the individual funnel arrangement. The ships were ***l'Adroit, l'Alcyon, Basque, Bordelais, Boulonnais, Brestois, Forbin, le Fortuné, Foudroyant, Fougueux, Frondeur, le Mars, la Palme*** and ***la Railleuse***.

Completion of this second group in 1931 was followed by a five-year 'holiday', construction being resumed with the planned 12-strong **'le Hardi' class**, though these were more scaled-down 'contretorpilleurs' than related to the 'l'Adroits'. Much larger at 1,770 tons standard, they carried half as many guns again in twinned mountings, more torpedo tubes and, more importantly, had improved endurance. The ships were the ***Casque, le Corsaire, Epée, le Flibustier, Fleuret, le Hardi, Lansquenet, Mameluck, l'Aventurier, l'Intrepide, l'Opiniâtre*** and ***le Téméraire***.

The pattern of losses among the medium-sized French destroyers reflected the divided nature of their country's loyalties. Of the 'Bourrasques', Dunkirk accounted for four, three more were lost when the British landed at Oran in 1942 and another was scuttled at Toulon. In the case of the 'l'Adroits', two were lost to German action at Dunkirk, four more through Allied action at Casablanca in 1942 and three were scuttled at Toulon. Of the 'le Hardis', only the leadship was ready in time to be of use, but was Vichy-manned at Dakar. Later units were completed by both the Germans and Italians, serving without much note.

Specification

'l'Adroit' class (as built)
Displacement: 1,378 tons standard and 1,900 tons full load
Dimensions: length 107.2 m (351.7 ft); beam 9.8 m (32.2 ft); draught 4.3 m (14.1 ft)
Propulsion: two sets of geared steam turbines delivering 24980 kW (33,500 shp) to two shafts
Performance: maximum speed 33 kts; endurance 2125 km (1,320 miles) at 15 kts
Armament: four single 130-mm (5.1-in) and one 75-mm (2.95-in) AA guns, and two triple 550-mm (21.65-in) torpedo tube mountings
Complement: 140



Improved versions of Bourrasque, *the first French destroyer design after 1918,* l'Adroit *and her sisters were completed in the late 1920s. She was sunk off Dunkerque in May 1940.*

THE NETHERLANDS

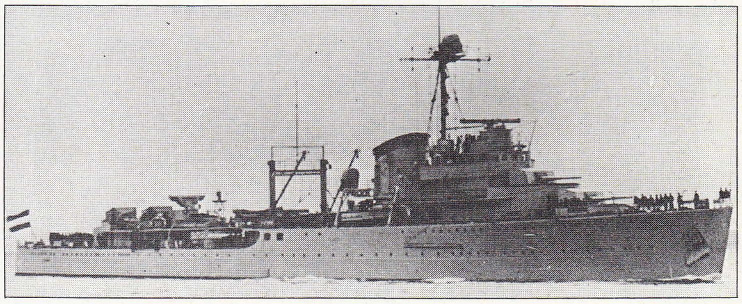
'Tromp' class destroyer

The ***Tromp*** and her sister ***Jacob van Heeinskerck*** of the **'Tromp' class** were interesting in being more 'pocket cruisers' than destroyers and demonstrates how, at the top of the size scale, the distinction between the two could be less than clear cut. They both possessed that quality of solid angularity that belied their small size and which was typical of Dutch practice. The French 'le Fantasques' were as large as the 'Tromps', but the latters' armament equalled that of the planned German *Spahkreuzer* (scout cruiser) concept; they were also designed to carry more torpedoes than many destroyers, but what really set them apart was their lack of speed. Even so, their excellent seakeeping enabled them to maintain their modest 32.5 kts long after 'faster' ships had been obliged to ease back.

The pair had true destroyer ancestry, being planned as leaders. Their design was enlarged, however, and welding and aluminium were employed extensively to save weight. An interesting reflection on their use in the vast Dutch East Indies was the incorporation of a Fokker seaplane and facilities. These would also have been included on the **'Callenburgh' class** destroyers had they ever been built as planned.

The *Tromp* was completed in August 1938, the same builders immediately laying down her sister. At the invasion of 1940 the latter came to the UK for completion with a very different armament. A stir was caused in British naval circles by the advanced Hazemeyer fire control for the AA armament; even the 150-mm (5.9-in) main battery could be elevated to 60°. Another interesting feature was light horizontal and vertical protection.

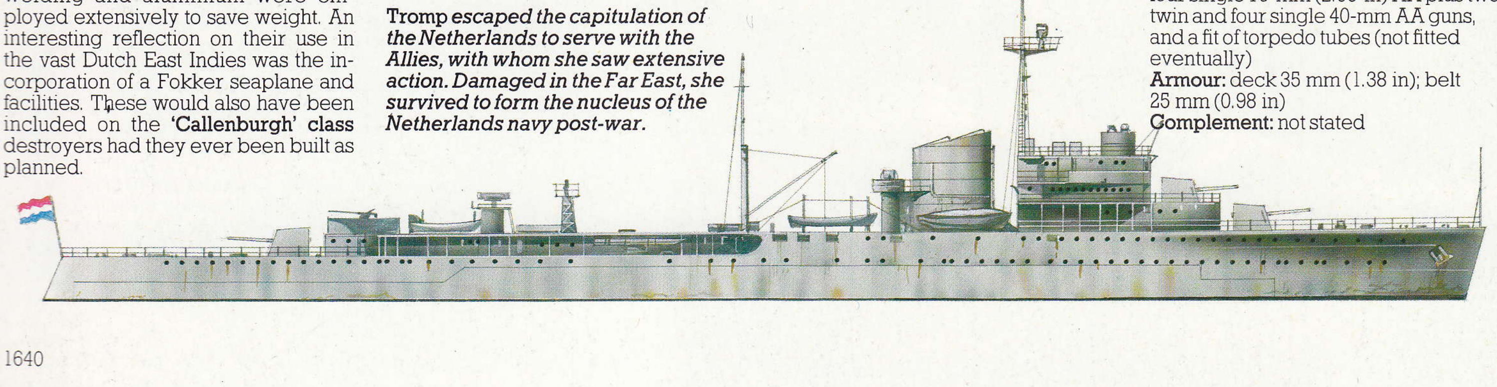
Though finding herself part of the hard pressed ABDA force at the opening of the war with Japan, the *Tromp* escaped after being extensively damaged disputing the invasion of Bali. She was sent to Australia for repairs, the lengthy nature of which were her salvation, for she re-entered service in time for the new Allied naval build-up in the Far East. During the counter-offensive she took part in operations against Sabang and Balikpapan in Borneo.



Seen in 1938, Tromp *was an interesting design which could almost equally be called a light cruiser as a destroyer. Main armament of six 130-mm (5.9-in) guns also put her into the light cruiser class.*

Specification

Tromp (as designed)
Displacement: 4,200 tons standard and 4,900 tons full load
Dimensions: length 131.91 m (432.78 ft); beam 12.41 m (40.72 ft); draught 5.41 m (17.75 ft)
Propulsion: two sets of geared steam turbines delivering 41759 kW (56,000 shp) to two shafts
Performance: maximum speed 32.5 kts
Armament: three twin 150-mm (5.9-in), four single 75-mm (2.95-in) AA plus two twin and four single 40-mm AA guns, and a fit of torpedo tubes (not fitted eventually)
Armour: deck 35 mm (1.38 in); belt 25 mm (0.98 in)
Complement: not stated



Tromp *escaped the capitulation of the Netherlands to serve with the Allies, with whom she saw extensive action. Damaged in the Far East, she survived to form the nucleus of the Netherlands navy post-war.*

Royal Navy

Part 4

The Royal Marines

The Royal Marines comprise a regular force of 7,700 officers and men with a reserve of a further 3,200. In 1984 the corps had the following units in service:

3rd Commando Brigade HQ
Nos 40, 42 and 45 Royal Marine Commando Groups
29th Commando Regiment, RA (with 18 105-mm/4.13-in Light Guns)
59th and 131st (TA) Commando Squadrons, RE
3rd Commando Brigade Air Squadron (with 12 Gazelle AH.Mk 1 and six TOW-equipped Lynx AH.Mk 1)
Commando Logistic Regiment
Special Boat Squadron
1st, 2nd (Reserve) and 3rd (Reserve) Raiding Squadrons
4th, 6th and 539th Assault Squadrons

Despite the disbanding of No. 41 Commando in 1981, the corps had a successful Falklands war, gaining much public and political acclaim. However, in several key areas the conflict also showed up operational deficiencies, notably the lack of any heavy 155-mm (6.1-in) artillery pieces for counter-battery and fortification-reduction work, and the absence of any organic Rapier SAM systems. The presence of a brigade armoured reconnaissance unit, even of only squadron strength, with Scorpion and Scimitar light tracked vehicles would also have been of considerable help. It is interesting to note that the comparable Soviet Naval Infantry force goes into battle with both medium and light tank support, 122-mm (4.8-in) self-propelled artillery, multiple rocket launchers and its own SAMs.

In wartime the Royal Marines will be aided by the Dutch 1st Amphibious Combat Group, which will provide units for use with the two mountain- and arctic warfare-trained Commandos on NATO's northern flank. Both marine corps will also provide units for operations in other NATO areas including (it is believed) the southern flank in support of Turkish and Greek forces. On the northern front the US Marine Corps will also provide units to fight south of the British and Dutch marines. Apart from these NATO roles, the Royal Marines also provide a world-wide amphibious assault capability for potential use by the British government in any trouble spot, the sea lift required for this role being provided by the Royal Navy and its amphibious warfare squadron centred on the two LPDs and the LSLs. How long this capability can be maintained is another moot point as the LPD's replacements must be ordered soon if continuity is to be maintained within the force.

The Royal Marines are a prime component of Britain's mobile warfare capability, ready for service in a wide variety of climates. Marines are seen here at training on Ascension Island prior to their fine performance in the Falkland Islands campaign.

Royal Navy order of battle

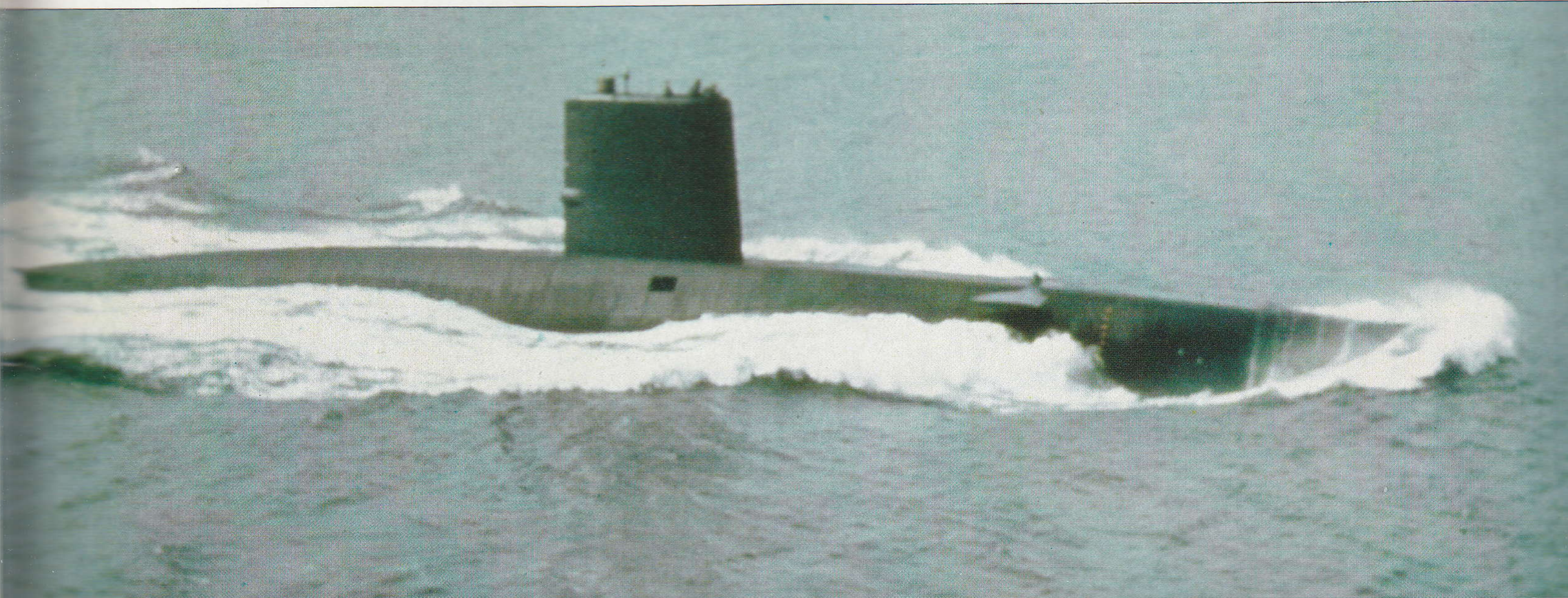
Major combat vessels and auxiliaries

Aircraft-carriers: *Invincible* (R05), *Illustrious* (R06), *Ark Royal* (R09, fitting out) and *Hermes* (R12, alongside training)

Ballistic missile submarines: *Renown* (S26), *Revenge* (S27), *Repulse* (S23) and *Resolution* (S22)

Fleet submarines: *Valiant* (S102), *Warspite* (S103), *Conqueror* (S48), *Courageous* (S50), *Churchill* (S46), *Superb* (S109), *Sovereign* (S108), *Swiftsure* (S126), *Sceptre* (S104), *Spartan* (S105), *Splendid* (S106), *Trafalgar* (S107), *Turbulent* (S110) and *Tireless* (S117), plus *Torbay*, *Talent*, *Tactician* and one unnamed building

Conventional submarines: *Orpheus* (S11), *Oberon* (S09), *Otter* (S15), *Oracle* (S16), *Ocelot* (S17), *Osiris* (S13), *Odin* (S10), *Onslaught* (S14), *Otus* (S18), *Opportune* (S20), *Onyx* (S21), *Olympus* (S12), *Opossum* (S19), *Sealion* (S07) and *Walrus* (S08), plus *Upholder* building and a further 9-11 'U' class planned



HMS Conqueror*, a nuclear-powered fleet submarine, returns to port at the conclusion of a patrol. The 'Valiant' class has been in Royal Navy service for two decades, and is likely to remain so for some time alongside the 'Swiftsures' and 'Trafalgars'.*

CLEOPATRA F28

Seen on active service in the South Atlantic, the large 'County' class guided missile destroyers will remain in Royal Navy service for several years, with the two survivors, HMS **Fife** *and HMS* **Glamorgan**, *serving alongside HMS* **Bristol** *as flagships.*

- Assault ships: *Fearless* (L10) and *Intrepid* (L11)
- Guided-missile destroyers: Type 82 *Bristol* (D23); 'County' class *Glamorgan* (D19) and *Fife* (D20); Type 42 Batch 1 *Birmingham* (D86), *Cardiff* (D108), *Glasgow* (D88) and *Newcastle* (D87); Type 42 Batch 2 *Exeter* (D89), *Southampton* (D90), *Nottingham* (D91) and *Liverpool* (D92); Type 42 Batch 3 *Manchester* (D95), *Gloucester* (D96), *York* (D98) and *Edinburgh* (D97)
- Frigates: Type 21 *Amazon* (F169), *Active* (F171), *Ambuscade* (F172), *Arrow* (F173), *Alacrity* (F174) and *Avenger* (F185); Type 22 Batch 1 *Broadsword* (F88), *Battleaxe* (F89), *Brilliant* (F90) and *Brazen* (F91); Type 22 Batch 2 *Boxer* (F92), *Beaver* (F93) and *Brave* (F94), plus *London*, *Sheffield* and *Coventry* building; Type 22 Batch 3 *Cornwall* plus three others building
  - Ikara 'Leander': *Aurora* (F10), *Euryalus* (F15), *Galatea* (F18), *Arethusa* (F38), *Naiad* (F39), *Leander* (F109) and *Ajax* (F114)
  - Exocet 'Leander': *Minerva* (F45), *Danae* (F47) and *Penelope* (F127)
  - Training 'Leander': *Juno* (F52)
  - Exocet 'Leander' (Towed Array): *Cleopatra* (F28), *Sirius* (F40), *Phoebe* (F42) and *Argonaut* (F56)
  - Broad-beam 'Leander': *Achilles* (F12), *Diomede* (F16), *Apollo* (F70) and *Ariadne* (F72)
  - Seawolf 'Leander': *Andromeda* (F57), *Hermione* (F58), *Jupiter* (F60), *Scylla* (F71) and *Charybdis* (F75)
  - 'Rothesay' class: *Rothesay* (F107), *Plymouth* (F126), *Yarmouth* (F101), *Lowestoft* (F103), *Berwick* (F115) and *Falmouth* (F113) (all to be deleted from 1985 onwards)
  - Type 12 Training: *Torquay* (F43, to be deleted 1985)
- Ice patrol ship: *Endurance* (A171)
- Royal yacht: *Britannia* (A00)
- LSL: *Sir Bedivere* (L3004), *Sir Geraint* (L3027), *Sir Lancelot* (L3029), *Sir Percival* (L3036), *Sir Tristam* (L3505), *Sir Caradoc* (L3522) and *Sir Lamorak* (L3532)
- Large fleet tankers: *Olwen* (A122), *Olna* (A123), *Olmeda* (A124) and *Tidespring* (A75)
- Support tankers: *Appleleaf* (A79), *Brambleleaf* (AS81), *Bayleaf* (A109), *Orangeleaf* (chartered 1984) and *Pearleaf* (A77)
- Small fleet tankers: *Green Rover* (A268), *Grey Rover* (A269), *Blue Rover* (A270), *Gold Rover* (A271) and *Black Rover* (A273)
- Replenishment ships: *Fort Grange* (A385), *Fort Austin* (A386), *Resource* (A480) and *Regent* (A486)
- Aviation support ships: *Reliant* (A131) and *Engadine* (K08)
- Seabed operations vessel: *Challenger* (K07)
- Repair and maintenance vessel: *Diligence* (?)

Minor surface vessels

- Patrol vessels: *Alderney, Anglesey, Guernsey, Jersey, Lindisfarne, Orkney, Shetland, Dumbarton Castle, Leeds Castle, Protector, Guardian, Sentinel, Peacock, Plover, Starling, Swallow, Swift, Kingfisher, Cygnet, Petrel* and *Sandpiper*
- Minelayer/MCMV depot ship: *Abdiel*
- Fleet minesweepers: 'River' class *Waveney, Carron, Helford, Dovey* and *Blackwater*, plus *Itchen, Helmsdale, Humber* and four unnamed building
- Coastal minesweepers: 'Ton' class *Alfriston, Bickington, Crickton, Cuxton, Hodgeston, Pollington, Walkerton, Soberton* and *Stubbington*
- Coastal minehunters: 'Ton' class *Bildeston, Brereton, Brinton, Bronington, Bossington, Gavinton, Hubberston, Iveston, Kedleston, Kellington, Kirkliston, Maxton, Nurton, Sheraton* and *Wilton*
- MCMV: 'Hunt' class *Brecon, Ledbury, Cattistock, Cottesmore, Brocklesby, Middleton, Dulverton* and *Chiddingfold*, plus *Atherstone, Bicester* and *Hurworth* building with four others planned
- Survey ships: *Herald, Hecla, Hydra* and *Hecate*
- Coastal survey ships: *Fox, Fawn, Beagle* and *Bulldog*
- Inshore survey ships: *Echo, Enterprise, Egeria* and *Gleaner.*

HMS **Cottesmore** *is the fourth of a new class of GRP-hulled mine countermeasure vessels (MCMV). Current plans for the 'Hunt' class envisage a total of 14 vessels being constructed into the late 1980s.*